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DIET IN INTESTINAL DISORDERS *

J. ARNOLD BARGEN, M.D.
AND
SISTER M. VICTOR, B.S.
ROCHESTER, MINN.

Much confusion exists concerning foods to be eaten by persons who have intestinal disturbances. It is forgotten that the principal function of a major part of the large intestine is storage, that some absorption takes place in the right half of the colon, but that most of the digestion and absorption occurs in that part of the gastro-intestinal tract which is above the colon. The amount of confusion in regard to this is often startling, and it is not unusual to find people following totally inadequate diets for various actual or presumptive pathologic conditions. This is particularly emphasized when patients with inflammatory diseases of the colon present themselves for examination or observation. It is also forcibly brought to attention by the vast number of unfortunate persons who suffer from so-called irritable colon, with diarrhea of indeterminate origin, or constipation and intestinal flatulence.

Perhaps too much attention has been paid to the food of patients with intestinal dysfunction. This view has its proponents and its antagonists. Primarily, many internal abdominal disturbances have been called colitis in which there was no demonstrable inflammation of the large intestine. The terms "mucous colitis," "spastic colitis," and many others, are badly chosen, because they do not stand for colonic disease but rather for a single phase of a general bodily derangement, of which the basic phenomena are in the nervous system. Hence, in commenting on diet in intestinal disorders, there must first be a cleancut picture of the conditions for which such diet is advised.

We propose here to outline helpful suggestions relative to diet for certain chronic ailments which afflict the intestine of man, such as chronic ulcerative colitis, diverticulosis and mild diverticulitis, malignant disease in its preoperative phase and certain postoperative complications. Also, we shall include the diet for persons who have undergone colostomy, and a few pertinent facts on the "irritable colon."

The main features concerning the diet for chronic ulcerative colitis are (1) its nonirritating and low-residue character; (2) its calory value; (3) the method of feeding, and (4) its adequate content of vitamins. The last is perhaps not as important as the other features, for in a well balanced diet the vitamin content will be adequate. However, as Larimore [1] has pointed out, this feature may have significance.

On this basis we have outlined the following dietary regimen for the average patient with chronic ulcerative colitis who requires to be hospitalized. On admission, the patient is given a strictly bland diet which serves as a foundation to which additions are made, usually every second day. The rapidity with which increase is made is determined by the extent and severity of the ailment, the patient's likes and dislikes in food, and his or her general make-up. Occasionally ambulatory patients start with a generous diet which includes the first eight additions given in table 1. A few are able to tolerate the full diet from the beginning.

The diet served to the patient on admission is noticeably inadequate in minerals and vitamins, especially the latter. The deficiency is due to the omission of vegetables, fruits and milk; this omission frequently is necessary in the beginning of treatment in order to combat diarrhea and accompanying abdominal distress. Vegetables and fruits are at first restricted because of their influence on intestinal peristalsis. Milk is added late in the course of the disease because of the common complaint by patients that they tolerate milk poorly, and because, as Alvarez [2] and others have pointed out, it leaves a bulky residue.

The patient is kept on this restricted diet for only a short time. The addition of foods rich in minerals and vitamins is made as rapidly as possible in order to remedy the inadequacy of the diet. Milk provides calcium and phosphorus in generous amounts; vegetables and fruits increase the content of iron; green, leafy vegetables are especially valuable for the iron they furnish; peaches and apricots aid in the formation of hemoglobin, a fact recently demonstrated; meat, liver and eggs help to supply the requirement of iron.

Vitamin B, the appetite-stimulating vitamin, is furnished by yeast, which is used regularly throughout the treatment. The other vitamins are added as soon as the patient can tolerate the foods that yield them. Banana, orange juice, and tomato juice provide vitamin C. Milk, butter and vegetables, especially the fresh green vegetables, afford a good supply of vitamins A and D.

Cod liver oil is sometimes prescribed to increase the intake of the fat-soluble vitamins, but to many patients it is very distasteful, sometimes causing nausea. It cannot, therefore, be used as a routine.

The full diet for chronic ulcerative colitis contains all essential factors, according to the present knowledge of nutrition and food values.

The diet for tuberculous enterocolitis includes the essentials of that for chronic ulcerative colitis, plus modifications to tempt the individual palate. In general, the suggestions offered by Goldberg and Smithies [3] have served well.

* From the Division of Medicine, the Mayo Clinic, and the Department of Nutrition, Saint Mary's Hospital.

1. Larimore, J. W.: Chronic Ulcerative Colitis: Observations on Treatment by Diet, Tr. Am. Gastro-Enterol. A. **30**: 298-318, 1927.

2. Alvarez, W. C.: A Practical Treatment of Duodenal Ulcer, J. A. M. A. **87**: 2086-2089 (Dec. 18) 1926.

3. Goldberg, Benjamin; and Smithies, Frank: Tuberculous Enterocolitis, Bull. City Chicago Municipal Tuberc. Sanitar. **9**: 5-48 (Oct.-Dec.) 1929.

The diet for diverticulosis should be bland but nonconstipating. For these cases we have used the full diet for chronic ulcerative colitis, made laxative by the addition of agar, more vegetables of low residue and fruit juices. One tablespoonful of agar is served with each meal, and two or three glasses of fruit juice are given between meals. Fruits with seeds and foods with a high content of cellulose are prohibited.

Much can be accomplished by proper dietary measures in preoperative relief of partial or chronic intestinal obstruction, particularly when this is caused by new growths. The diet is only a small part of the treatment, but we have found the nonresidue diet, given in table 2, of inestimable value in thorough emptying of the large intestine before operation. The principles on which this diet is based are: (1) its food value; (2) its relative freedom from residue, and (3) its favorable effect on the intestinal flora. This diet is served only during the period of intestinal decompression and emptying, a period of from two to five days. Some foods with a small amount of residue are included in order to make the diet more palatable, but the aim is to keep the residue as nearly negligible as possible.

TABLE 1.—*Dietary Regimen for Patients with Chronic Ulcerative Colitis*

FOUNDATION DIET *

Breakfast	Dinner	Supper
Cereal,† bland, 1 serving	Meat soup without vegetables, 1 serving	Steamed rice, 1 serving
Cream, ½ cup	Meat, 1 serving (liver three times a week)	Meat or fish, 1 serving or 2 eggs
Bacon, 2 strips	Potato, 1 medium sized	Bread, white or rye, 1 slice
Egg, 1	Gravy if desired	Butter, 2 squares
Toast, 1 slice	Bread, white or rye, 1 slice	Bland dessert,§ no fruit, 1 serving
Butter, 2 squares	Butter, 2 squares	Cream, 2 tablespoonfuls
Coffee if desired	Bland dessert,§ no fruit, 1 serving	Tea if desired
Sugar	Cream, 2 tablespoonfuls	Sugar
Brewers' yeast ‡	Tea if desired	Brewers' yeast
	Sugar	
	Brewers' yeast	

THE ADDITION DIET

Made to the foundation diet as rapidly as the patient's condition permits; finally the foundation diet with the nine additions, constitutes the full diet, containing 80 Gm. of protein and 3,000 calories. Jelly, or jam without seeds, may be served, if desired. Beverages should not be iced. The patient is instructed to eat ice cream slowly. Condiments, such as mustard, horseradish, catsup, vinegar, and highly seasoned sauces or relishes are best avoided. To avoid any undue peristalsis, food is not given between meals.

ORDER OF ADDITIONS

One banana, very ripe
Orange juice, ¼ glass
Vegetable purée, 2 tablespoonfuls
Milk in the form of cream soup or milk toast
Whole milk, 2 glasses
Cream, 2 glasses, added to milk so that each glass contains half milk and half cream
Bland fruit, canned or cooked peaches, apricots, pears, strained apple sauce, baked apple without skin, 1 serving
Tomato juice, ½ glass
Whole cooked vegetable, 2 servings (purée omitted), including, as desired, young tender carrots, beets, spinach, squash, string beans, asparagus and green lettuce cut very fine, with plain mayonnaise or cooked dressing if desired

* Given on admission, contains approximately 60 Gm. of protein and 2,000 calories.

† Cream of wheat, farina, puffed rice, puffed wheat, corn flakes, rice krispies and strained oatmeal.

‡ Brewers' yeast, 200 mg. standardized vitamin fraction is given with each meal.

§ Custards, cornstarch puddings, junkets, gelatin desserts without nuts or fruit, plain rice puddings, simple cakes and cookies, and plain ice cream.

The care of the patient who has undergone colostomy does not end with the completion of the required surgical maneuver. W. J. Mayo [4] has adequately described the depressed mental status of a patient who has undergone colostomy and who has not had proper postoperative treatment. Such a patient can be made happy and comfortable and able to fill whatever useful position he may have held before the performance of colostomy for whatever cause, by properly fitted colostomy appliance and adequate dietary care.

4. Mayo, W. J., in Discussion, Minnesota Med. **13**: 801-802 (Nov.) 1930.

TABLE 2.—*Nonresidue Diet Before Operation* *

Breakfast	Dinner	Supper
Fruit juice, any kind, 1 glass	Broth with 1 square of butter	Broth with 1 square of butter
Heavy cream, 4 tablespoonfuls	Gelatin, plain, 2 heaping tablespoonfuls	Steamed rice, 2 heaping tablespoonfuls †
Egg, 1	Heavy cream, 4 tablespoonfuls	Heavy cream, 4 tablespoonfuls
Butter, 1 square	Fruit juice, any kind, 1 glass	Fruit juice, any kind, 1 glass
Arrowroot cookies, 2	Arrowroot cookies, 2	Arrowroot cookies, 2
Coffee †	Tea or coffee †	Tea or coffee †
9 a. m.	3 p. m.	
Candy, 5 ounces, either pure sugar candy or milk chocolate without nuts	Fruit juice, any kind, 1 glass	

* Contains approximately 2,300 calories.
† Sugar for tea, coffee and rice as desired.

The diet (table 3) is characterized by (1) a low content of water, and therefore selection of foods which contain only a small amount of water; (2) a low-residue value, and for this reason the amount and kinds of fruits and vegetables are strictly limited; (3) the free use of concentrated foods, and (4) a limited allowance of fluid, and therefore the total amount for the day is often restricted to four or five glasses, including milk, tea, coffee and other beverages. Neither food nor fluid is allowed between meals.

When the stools become normal, the amount of fruits and vegetables may be increased. At first only cooked fruits and vegetables should be added. Later the patient may be able to tolerate raw fruits and vegetables. The allowance of liquid may be increased, and the milk is no longer boiled. Before the patient leaves the hospital, he is carefully instructed how to regulate his diet and to adjust it. Some patients find it necessary to adhere closely to the diet outlined in the foregoing; others are able to partake more liberally of fruits, vegetables and fluids, and a few are able to take a full, normal diet.

Among the distressing complications after surgical procedures on the intestine are diarrhea, dysfunction of the kidneys and bladder, glycosuria, and paralytic ileus. Each often demands very careful, persistent and patient study of the need for food and liquid. Each case demands individual care.

TABLE 3.—*Diet for Patient Who has Undergone Colostomy*

Breakfast	Dinner	Supper
Orange juice, ¼ glass	Meat, 1 serving	Cheese, 1 serving
Bacon or egg, 1 serving	Potato, 1 serving	Meat, 1 serving, or 2 eggs
Toast, as desired	Shredded lettuce, 1 serving	Potato or substitute
Butter, as desired	Bland dessert, no fruit	Fruit, ripe banana or other bland fruit
Coffee, if desired	Bread, toast, or crackers, as desired	Bread, crackers, or zweibach, as desired
Brewers' yeast	Butter, as desired	Butter, as desired
	Jelly, if desired	Jelly, if desired
	Milk (boiled), 1 glass	Milk (boiled), 1 glass
	Tea, if desired	Brewers' yeast
	Brewers' yeast	

The patient with "irritable colon" presents an ever-present problem. For those with obstinate constipation, those with mucous-covered stools, and those who are habitual users of cathartics, a bland, anticonstipation diet similar to the one designated for diverticulosis has utmost value. The amount of residue must be graded according to the patient's irritability and tolerance.

For patients with the diarrheal phase of irritable colon, suitable modifications of the diet for chronic ulcerative colitis have been helpful. However, in these cases instruction must be specific, not general, and the diet to be used will depend on the experience of the individual physician with the individual patient.

COMMENT

Fads and fancies exist in the minds of many in regard to foods for intestinal complaints. Much harm has been done by ill advised or wrong conceptions of the necessities. An attempt has been made here, based on an experience with many hundreds of cases of intestinal disease, to outline a rational scheme of diet. The basic necessities seem to be a generous allowance of calories, absence of irritation, and satisfactory elimination.

SKIN TESTS AND IMMUNIZATION AGAINST SCARLET FEVER AND DIPHTHERIA

RESULTS IN NURSES OF COOK COUNTY HOSPITAL *

PAUL S. RHOADS, M.D.

CHICAGO

From Jan. 1, 1927, to July 1, 1930, there were 1,280 undergraduate nurses on duty in the Cook County Hospital. Practically all were exposed at some time in their stay to scarlet fever and diphtheria. The majority were tested for susceptibility to scarlet fever and diphtheria and immunized if susceptible by the Preventive Medicine Clinic of the Scarlet Fever Committee. Others were not tested or were tested but did not complete their immunization. These constitute a satisfactory control group.

RESULTS OF SKIN TESTS FOR SUSCEPTIBILITY TO SCARLET FEVER

Of the 1,280 nurses, 913 received the Dick test; 380 (41.6 per cent) were found susceptible and 533 (58.4 per cent) were found immune to scarlet fever. None of those found immune on original tests contracted scarlet fever. During the same period, fifteen cases occurred among a group of 449 who were either not tested and not immunized at all or incompletely immunized.

RESULTS OF IMMUNIZATION WITH SCARLET FEVER TOXIN

Two hundred and ninety-eight nurses with positive Dick tests indicating susceptibility to scarlet fever received five immunizing doses of scarlet fever toxin—500, 2,000, 8,000, 25,000 and 80,000 skin test doses, respectively. Two hundred and seventy-three were retested two weeks after the last dose. Of these, 81.4 per cent were found immune, the remainder receiving more doses, usually of 100,000 skin test doses each, until their retests were negative. That adults are more difficult to immunize against scarlet fever than children is shown by comparing these results with those in children's groups in which the same dosage is used and from 95 to 100 per cent are found immune when retested.

No cases of scarlet fever occurred among the 298 receiving the complete immunizing series of five doses. Of the fifteen cases which developed during the same period in the nonimmunized group, two were among nurses who had been found susceptible by the Dick test but who had not returned to be immunized. One nurse contracted scarlet fever after she had been given a third immunizing dose but before the fourth and fifth doses had been given. The remaining twelve cases were among the group of 367 who were neither tested nor immunized by the Scarlet Fever Committee.

* From the Wallace R. Lane Fund of the Scarlet Fever Committee and the John McCormick Institute for Infectious Diseases.

IMMUNIZATION OF AFFILIATING NURSES

More than half the undergraduate nursing body is composed of nurses from surrounding hospitals who affiliate with the School of Nursing of the Cook County Hospital for work in special subjects, chiefly pediatrics and contagious diseases. Their periods of affiliation range from three months to one year. Every effort has been made to have the home schools immunize them before they come to Cook County Hospital. The following suggestions have been sent to the affiliating schools.

PROGRAM OF IMMUNIZATION

1. *Smallpox vaccination.*

2. *Typhoid immunization.* The dosage and method of administration is that given in the directions with the commercial preparations.

3. *Scarlet fever immunization.* First the Dick test is made by injecting exactly 0.1 cc. of Dick test toxin intradermally on the volar surface of both forearms. Regular skin test syringes (made by MacGregor of Philadelphia) and 26 gage "Summit" needles are used. The syringe should be sterilized by boiling in distilled water only. Alcohol may precipitate the toxin, and alkaline tap water may alter it. The test is made on both arms to avoid error in technic. A control test is not necessary. The tests are observed from twenty to twenty-four hours later. It is unsafe to take readings after a lapse of twenty-four hours because a positive test may have faded by that time. Any degree of pinkness 0.5 cm. or more in any diameter is regarded as a positive test. Those found susceptible are immunized by being given the five graduated doses of immunizing scarlet fever toxin subcutaneously at intervals of one week. Only preparations of scarlet fever toxin approved by the Scarlet Fever Committee and so labeled are used. Two weeks after the last dose of scarlet fever toxin, the subjects are retested and if the test is still even slightly positive a sixth dose, the same size as the fifth, is used. One is strongly advised against using the two or three dose immunization with so-called scarlet fever ricinoleated antigen. In our experience this material gives extremely severe reactions and does not produce good immunization.

4. *Diphtheria immunization.* First a Schick test is made by injecting exactly 0.1 cc. of Schick test material intradermally in the upper arm with a control test of the same material which has been boiled in a water bath for at least twenty minutes. The tests are observed at forty-eight hours. Faint tests may fade after this time. Any degree of pinkness or induration above 0.5 cm. in diameter is regarded as a positive test. Fewer results are being called pseudoreaction as our experience enlarges. Even if the control test is as large as the regular Schick test we usually call the test positive unless the control test is as bright and as indurated as that with unheated toxin. Schick test material is never used more than forty-eight hours after the mixture of concentrated diphtheria toxin and salt solution is made. Those found susceptible are immunized by repeated doses of diphtheria toxoid. Toxoid is used altogether by the Scarlet Fever Committee now because it avoids sensitization to serum which may be produced by toxin-antitoxin preparations and because in our experience it gives more satisfactory immunization.

Since adults react more severely than children to toxoid, we give five instead of the usual three doses, making the first three quite small. A suggested plan of administration is as follows. A first dose of 0.1 cc. is given followed one week later by 0.25 cc. and then a week later by 0.5 cc. Two weeks later 1.0 cc. is given, and two weeks after this a final dose of 1.5 cc. The retest is made two weeks after the last dose. If the test is still positive, more immunizing doses are given.

Among the schools in which the suggestions have been carefully carried out, the majority of the nurses are found to be immune when they arrived at Cook County Hospital. In nurses from those schools using so-called ricinoleated antigen rather than five graduated doses of scarlet fever toxin, more than 75 per cent have positive Dick tests when they report at Cook County Hospital. Since skin tests are usually not done before the "ricinoleated antigen" is injected, since nurses spontaneously immune to scarlet fever are included in the group as well as those susceptible, and since 75 per cent is a high incidence of susceptibility in any group, it is apparent that "ricinoleated antigen" has no demonstrable protective value in these nurses.

Until Jan. 1, 1930, an effort was made to keep nurses from duty in the contagious disease and children's hospitals until they had been completely immunized against scarlet fever and diphtheria, since more than three fourths of the contagious disease among the nurses had developed in these wards.

The question arose as to whether enforcement of this rule was justifiable in view of the fact that it entailed considerable loss of time to those affiliates who came only for training in the children's and contagious disease hospitals and were forced to wait until their immunizations were completed. During the first three months of 1930 an opportunity to answer the question presented itself.

The board of the nursing school decided to discontinue the immunization of affiliating students. Their own students, however, continued to have compulsory immunization and were excluded from the children's hospital and the contagious disease wards until their series were complete.

Accordingly, a group of 112 affiliating students who entered Cook County Hospital late in December, 1929, were assigned to duty without tests for susceptibility or any immunization against scarlet fever except what had been given at their own hospitals. Some were put on duty in the main hospital, some in the children's hospital and some in the contagious disease hospital, where they worked side by side with nurses who had been immunized or found spontaneously immune on original Dick tests here.

Within three months, 8 of the 112 untested and nonimmunized affiliates had come down with scarlet fever. No cases developed in those found spontaneously immune or those immunized here.

The data regarding the previous attempts at immunization of these eight nurses who contracted scarlet fever were obtained directly from their training schools. Three had been given courses of "ricinoleated antigen." Two others had received the Dick test at their own schools and been told they were insusceptible. It was learned that the test done on one of these nurses by a city health clinic was observed four days after it was made instead of at twenty to twenty-four hours. The cause of the error in the other case was not discovered. Another nurse was reported as immunized with scarlet fever "toxin" (the number of doses or the make of the preparation used was not stated) in 1927. Her Dick test at her own school in 1928 was recorded negative. The test was repeated in 1929 and found positive. She was then given one dose of "toxin" but received no retest. She was not tested by us. In the other two nurses, no attempt had been made at testing or immunization.

When the next group of affiliates came, in March, 1930, the old plan of compulsory tests and immunization of susceptibles for all undergraduates was resumed. No more cases of scarlet fever have developed, with the exception of one nurse who had a positive Dick test and was assigned by mistake to a scarlet fever ward of the contagious disease hospital before she was immunized. The day after going on duty in the scarlet fever ward she had fever, sore throat and nausea, and the following day a typical scarlet fever rash was present.

WARDS IN WHICH SCARLET FEVER WAS CONTRACTED

A record of the wards in which the nurses were on duty at the time they came down with scarlet fever was kept in fourteen of the fifteen cases. Seven of the fourteen were working in the children's hospital, three in the contagious disease hospital and four in the main hospital. Three of those who contracted scarlet fever while on duty in the main hospital had roommates in the contagious disease or the children's hospitals.

REACTIONS TO IMMUNIZING DOSES

Reactions consisting of one or more of the following symptoms: local tenderness, redness and swelling; rise in temperature; nausea; headache; malaise; joint pains, and, rarely, a transient rash occurred in the most highly susceptible nurses. The importance of these symptoms was magnified by some and minimized by others, so an accurate estimate of the discomfort they caused is difficult. However, the chief concern of the training school was time lost off duty. A careful record of time lost in this way was kept in 1929 and 1930. A total of 45.5 days was lost by 190 nurses receiving immunizing doses, an average of 0.239 day per nurse immunized.

DIPTHERIA IMMUNIZATION

A report[1] of diphtheria among the Cook County Hospital nurses from Jan. 1, 1926, to July 1, 1927, revealed that fourteen of the twenty-nine cases of diphtheria occurring during this time were among nurses who had received three or more doses of toxin-antitoxin. It showed further that there was a wide variation in potency of the commercial preparations of diphtheria toxin-antitoxin then on the market, several (including the preparation that had been used at Cook County Hospital) being definitely less potent than the regulations that the Hygienic Laboratory of the United States Public Health Service require. It was also felt at the time that three doses of toxin-antitoxin containing only 0.1 L + dose of toxin per injection instead of the 3 L + formerly used in this country, even of the ideal toxicity prescribed by the Hygienic Laboratory, were insufficient to immunize most adults.

Beginning in 1927, all the diphtheria immunization of the Cook County Hospital nurses was taken over by the Scarlet Fever Committee. All incoming students found to have positive Schick tests received five doses of toxin-antitoxin (0.5 cc. for the first dose and 1 cc. for the subsequent doses) at weekly intervals. A preparation found to be uniformly more toxic than the ideal toxicity recommended by the Hygienic Laboratory was used. Each lot used was tested for potency in our own laboratory. In 1928 a few of the nurses were immunized with diphtheria toxoid (anatoxine of Ramon[2]). In 1929 and 1930 toxoid was employed exclusively.

1. Rhoads, P. S.: Commercial Preparations of Diphtheria Toxin-Antitoxin: Protecting Value in the Nurses of Cook County Hospital, J. A. M. A. **90**: 254 (Jan. 28) 1928.
2. Ramon, G.: Anatoxine diphthérique, Ann. de l'Inst. Pasteur **42**: 959-1009 (Sept.) 1928.

RESULTS OF IMMUNIZATION WITH TOXIN-ANTITOXIN

Nine hundred and twenty-four nurses received the Schick test, 759 (82.1 per cent) being found susceptible and 165 (17.9 per cent) immune. One hundred and forty-one received five doses of toxin-antitoxin. Eighty-seven of this group were retested, 64.4 per cent being found immune. Most of those reacting positively to the retest received extra doses until the retest was negative. Three cases of diphtheria occurred in the group who were given five or more doses of toxin-antitoxin; one was in a nurse who had had a negative retest after immunization, one in a nurse who had completed the series of doses but had had no retest, and the third in a nurse who had had a positive retest and had gone on duty in the contagious disease hospital regardless, with no further immunization. All had mild attacks, the temperature in no case rising above 100 F. and lasting only two or three days. In all, however, there was a small pseudomembrane, and the cultures were positive for diphtheria bacilli.

RESULTS OF IMMUNIZATION WITH TOXOID

Four hundred and twenty-four nurses received the full series of doses of diphtheria toxoid, i. e., a total quantity of at least 2.5 cc. divided among three or more doses depending on the reactions experienced; 276 were retested, 81.4 per cent being found immune, the remainder requiring extra doses. One nurse who had the full series and then a negative retest developed a moderately severe attack of diphtheria when she went on duty in the contagious disease hospital.

In the same period there were sixteen cases of typical diphtheria among 357 nurses who had been neither tested nor immunized; two in the group of 35 who were incompletely immunized with toxin-antitoxin, and one in a nurse tested and found susceptible but not immunized.

TABLE 1.—*Results of Immunization Against Scarlet Fever—Jan. 1, 1927, to July 1, 1930*

Classifications of Group	Number in Group	Cases of Scarlet Fever in Group: Number	Cases of Scarlet Fever in Group: Per Cent
Immunized with full series of scarlet fever toxin followed by negative retest or more doses if indicated	273		
Immunized with full series of toxin but no retest	25		
	—298	0	0
Incompletely immunized; less than five doses	52	1	
Positive Dick tests but no immunization	30	2	
No tests or immunization here	367	12	
	—449	—15	3.3
Negative original Dick tests	533	0	0
Total number of nurses	1,280		

RELIABILITY OF THE SCHICK TEST

One hundred and sixty-five nurses had negative original Schick tests. Two of these had moderately severe attacks of diphtheria while on duty in the contagious disease hospital. The only explanations for this occurrence are that the Schick test material used was not potent or that the tests were improperly interpreted. The latter error probably was not made, because the tests were always observed at forty-eight hours. No test was recorded as pseudonegative if the test with unheated toxin was larger, brighter or more indurated than that with heated toxin.

It was obviously too late to test the potency of the Schick test material previously used, but it was thought that tests of several different preparations simultaneously might throw some light on the question. Seven commercial preparations, one state health board, and one made in our own laboratory were used for Schick tests at the same time on the same persons within twenty-four hours after the preparations were diluted as directed on the packages. Two of the commercial preparations gave practically no reaction in any of the persons tested, while the remaining seven gave positive results with varying degrees of size and brightness in the same persons. It is of interest that the p_H determinations of the diluted toxins which gave positive results were between 6.95 and 8.35, while those which gave negative tests in the same persons had p_H values of 6.8 and 4.85, respectively. One of the latter was a brand which we had used until a few months previously. At present only diphtheria toxin made and standardized in our own laboratory is used for Schick tests. It is never used more than twenty-four hours after diluting.

TABLE 2.—*Results of Immunization Against Diphtheria—Jan. 1, 1927, to July 1, 1930*

Classification of Groups	Number in Group	Cases of Diphtheria in Group: Number	Cases of Diphtheria in Group: Per Cent
Immunized with five doses of toxin-antitoxin followed by negative retest or extra doses if indicated	87	1	
Immunized with five doses of toxin-antitoxin but no retest	53	1	
Immunized with five doses of toxin-antitoxin, positive retest but no extra doses	1	1	
Immunized with diphtheria toxoid (2.5 cc. or more) and negative retest or extra doses if indicated	376	1	
Immunized with full series of toxoid but not retested	48	0	
	—565	— 4	0.7
Incompletely immunized with toxin-antitoxin (less than 4.5 cc.)	35	2	
Incompletely immunized with toxoid (less than 2.5 cc.)	34	0	
Positive Schick test; no immunizing doses	124	1	
Not tested or immunized by Scarlet Fever Committee	357	15*	
	—550	—18	3.3
Negative original Schick tests	165	2†	1.2
Totals	1,280	24	

* Eleven of these patients had received three or more doses of toxin-antitoxin at the Cook County Hospital or at their home schools but were not tested or immunized by the Scarlet Fever Committee.
† Probably due to the use of impotent preparations of Schick test toxin.

WARDS IN WHICH GREATEST EXPOSURE OCCURS

A record of the places in which the nurses were on duty when they contracted diphtheria was found in fifteen cases. Seven were working in the contagious disease hospital, six in the children's hospital and two in the main hospital. This corresponded to the experience with scarlet fever. Now all nurses are required to have negative Dick and Schick tests before they report for duty in the wards of either the contagious disease or the children's hospitals. When extreme shortage of nurses has required a temporary suspension of this rule, the nurses not immune have been required to wear gauze masks over the mouth and nose while on duty.

PREVIOUS DIPHTHERIA IMMUNIZATION OF AFFILIATING NURSES

All affiliates are Schick tested on their arrival at the Cook County Hospital regardless of their previous history of immunization. Among 245 who said that they

had had three doses of toxin-antitoxin within the last three years, 203 (82.9 per cent) were found susceptible. Seventy said they had had five doses of toxin-antitoxin; of these, 48 (68.6 per cent) were still susceptible. Of course, verbal reports from the nurses themselves cannot be relied on, and the reports were not confirmed in all cases by correspondence with the home schools. However, the significant fact remains that most of the affiliates had some injections of toxin-antitoxin before coming to the Cook County Hospital and most were found still susceptible when they arrived for duty. Possible explanations of this fact have already been suggested. In our experience three doses of toxin-antitoxin appear to be insufficient to immunize most adults. Five doses are often inadequate. Many mistakes are made in Schick tests, some being due to improper interpretation, others to the use of impotent Schick test material.

REACTIONS TO IMMUNIZING DOSES

From Jan. 1, 1929, to July 1, 1930, forty-eight days were lost off duty by 361 nurses receiving immunizing doses, an average of 0.133 day per nurse immunized.

The reactions to toxoid were local tenderness, redness and swelling at the site of the inoculation, slight rise in temperature, headache and general malaise. These occurred in only the more highly susceptible individuals.

COMMENT

The wisdom of the plan of keeping undergraduate nurses from duty in pediatric or contagious disease wards until they have been properly immunized against scarlet fever and diphtheria has been demonstrated [3] at Cook County Hospital and at other hospitals. The necessity for Dick and Schick tests on all incoming students regardless of their previous history of immunization is also apparent.

SUMMARY

The Dick test proved to be a reliable indicator of immunity to scarlet fever. No cases developed among 533 nurses found immune on original tests, while fifteen cases occurred during the same period among 449 nurses who either were Dick positive or were neither tested nor immunized.

Immunization with five doses of scarlet fever toxin of 500, 2,000, 8,000, 25,000 and 80,000 skin test doses, respectively, was successful. No cases of scarlet fever occurred among 298 nurses who received the full series of immunizing doses, while there were fourteen cases during the same period among 449 nurses who received no immunizing doses from the Scarlet Fever Committee and one case in a nurse who had received three doses but had not had her fourth and fifth immunizing doses.

Among the 190 nurses immunized against scarlet fever, the total loss of time due to reactions from the immunizing doses was 45.5 days, an average of 0.239 day per nurse.

The results of immunization against diphtheria with five doses of toxin-antitoxin of tested potency and with diphtheria toxoid followed by retests and more doses when indicated were distinctly better than those previously reported when only three doses of toxin-antitoxin were used.

Three cases of diphtheria occurred among 141 nurses who received five or more doses of diphtheria toxin-antitoxin of tested toxicity. One case of diphtheria occurred in a group of 424 nurses who received a full series of doses (totaling 2.5 cc. or more) of diphtheria toxoid. During the same period there were eighteen cases of diphtheria among 550 nurses with identical exposures who were either not immunized at all or who received less than the full series of diphtheria toxin-antitoxin or toxoid.

Two cases of diphtheria occurred among 165 nurses who had negative original Schick tests. It is probable that an impotent preparation of Schick test toxin was used for these tests.

Nine preparations of Schick test material were tested simultaneously. Two commercial preparations gave negative results in all persons tested, while all the others gave positive results in the same persons.

Complete series of diphtheria toxoid (totaling 2.5 cc. or more) immunized 81.4 per cent of the nurses to the point of a negative Schick test, while five doses of a preparation of toxin-antitoxin of tested toxicity (totaling 4.5 cc.) used in a similar group immunized 64.4 per cent to this point.

This corresponds with the results reported by the Dicks [4] in 1929.

Three hundred and sixty-one nurses who received diphtheria toxoid lost a total of forty-eight days from duty because of reactions, an average of 0.133 day per nurse.

637 South Wood Street.

3. Hektoen, Ludvig; and Johnson, Charlotte: Prevention of Diphtheria and Scarlet Fever in Nurses, J. Prev. Med. **2**: 289 (July) 1928.

4. Dick, G. F., and Dick, Gladys H.: Immunization Against Diphtheria: Comparative Value of Toxoid and Toxin-Antitoxin Mixtures, J. A. M. A. **92**: 1901 (June 8) 1929.

HAZARD OF LOW VOLTAGE SHOCKS *

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Life is beset with hazards. We all recognize some of them and we do not fear them unreasonably. Sensible people are aware that appreciation of what constitutes danger and what precautions will make an otherwise dangerous proceeding safe offers a greater measure of security than the attempt to eliminate all sources of danger. Many of our most healthful sports contain the elements of deadly danger, yet we do not forego them. We recognize that training in the technic of safe performance of dangerous feats is the best kind of preparation for a long and happy life.

This preamble is intended to indicate that it is not my intention to create a feeling of insecurity or to recommend any sweeping changes in our practices. This communication is written because a hazard exists which has caused the loss of a small number of lives, a number which would be insignificant except that it is easily possible to avoid most of the situations that are dangerous. The nature of the danger will be appreciated by the medical profession, though the layman as a rule will not understand it. The nature of the necessary precautions are, however, so extremely simple that a young child may comprehend them.

Since the public looks naturally to the medical profession for advice concerning the things that menace health and life, it seems appropriate for me, as a physician, to communicate information regarding this matter through medical channels.

In the early days of lighting with carbon arc lamps, it became common knowledge that contact with wires carrying current at voltages of the order of a thousand constitutes a menace to life. With the advent of the incandescent lamp and its general adoption for house

* From the Department of Physiology, Columbia University.

lighting, "low voltage" circuits became customary. In the early days there was a good deal of variation in voltages from plant to plant, but practice gradually settled on from 110 to 120 volts as standard, and a voltage of this order will be understood wherever in this paper the term low voltage is used.

During the many years since low voltage circuits came into general use, innumerable persons have come into contact with them, either accidentally or intentionally, and so seldom has there resulted even an unpleasant experience that a general impression has become prevalent that no precautions are necessary, except to avoid metallic short circuits such as may occur when tools touch both wires, giving rise to arcing and melting of metal. As a matter of fact, contact of the body with these low voltage circuits is comparatively safe in the vast majority of cases.

It is my purpose in this paper to invite attention to certain conditions in which it becomes not only unsafe but a positive hazard to life to make such a contact.

At this point it will be well to recall certain physiologic considerations which will afford the medical man a background for understanding the nature of the danger that is to be pointed out. Fibrillary contraction of the chambers of the heart, usually referred to as fibrillation, has been known to physiologists for many years. The phenomenon became of general interest to the medical profession a little over two decades ago when it was pointed out that a well known clinical condition was produced by persistent fibrillation of the auricles. It is common knowledge among all physicians who have graduated since that time that auricular fibrillation can be produced with ease and certainty in animals by passing through the auricular muscle a feeble alternating or rapidly fluctuating electric current. The potential difference that must be applied to the heart to evoke this condition is not large and may be but a few thousandths of a volt. When the auricles fibrillate the ventricles contract irregularly, rapidly but coordinately, and the circulation continues. If the stimulus is applied to the ventricles, their coordinate action gives place to fibrillation and all flow of blood at once ceases. In the smaller animals spontaneous recovery often occurs, but in animals with large hearts death is the usual result.

Physicians are also well aware that the heart produces in its action feeble electrical currents which can be detected and recorded by connecting the moistened skin of the extremities with suitable electrical measuring instruments. From the theory of electrical networks it can be inferred that, if a potential difference is applied to the moistened extremities, a part of the current will flow through the heart. It is known that it takes but little current to stimulate this organ and it might have been inferred beforehand that no very large alternating voltage would have to be applied to well moistened extremities to cause fibrillation of the ventricles. The same may be said for good contacts with the trunk directly. Direct current is a little less dangerous, but, even when derived from a battery at voltages above 30 or 40, the current produced by it in the body becomes discontinuous as a result of the effects of its flow and it can stimulate the ventricles to fibrillation.

Experiments on animals show that ventricular fibrillation is readily produced by alternating voltages as low as 30 applied to a moistened fore and hind limb. Many guinea-pigs have been killed in this laboratory by 30-volt shocks so applied to extremities moistened with salt water. Not every animal shocked, even with excellent moist contacts, will die. It appears that sometimes the current causes complete inhibition of the heart during the shock, in which case the beat, when resumed, is likely to be coordinate. The effect of a shock may also be modified by the state of the internal secretions, but this is conjectural. The point of interest is that in a very considerable number of animals shocked at low voltage with good contacts, ventricular fibrillation has ensued. Also this result is a stimulating effect of the electric current and not primarily a destructive one.

From time to time, over a period of more than ten years, deaths have been reported which seem to have been electrical in origin and to have followed contact with circuits nominally of low voltage. Sometimes evidence has been secured to show that, through some defect in equipment, voltages higher than the nominal low voltage may have been present on the line. For a long time it was assumed that something of this kind must have happened in all these cases, even when no evidence for it could be found. Gradually engineers have become inclined to the belief that in certain circumstances the low voltage itself may have been the fatal agent. It was assumed that the victim might have had some unknown disease which made him susceptible.

Present knowledge of the facts regarding ventricular fibrillation makes the explanation of these fatalities a simple matter. The human epidermis, when dry, has a great electrical resistance, and under these conditions contact with low voltage lines would not, ordinarily, cause currents of large enough magnitude to pass to bring about the stimulation of the ventricle required to produce fibrillation. It must be remembered, however, that "dryness" of the epidermis is a qualitative term and what might seem a safely "dry" skin may transmit a fairly large current when the area of contact is large. When the skin is definitely wet with copious perspiration or following a bath with soap and water, all doubt vanishes. A low voltage shock then is definitely hazardous. Every electrocardiographer knows that thorough wetting of the skin results in great lowering of the resistance. As prepared for electrocardiography, the resistance across the extremities may be as low as 300 ohms for alternating current. A slight cut or abrasion of the skin also has the effect of lowering the resistance greatly.

A considerable number of fatal accidents have happened to people in bathtubs. Recently a citizen of Philadelphia was found dead in his bath with an electrical apparatus for vibratory massage which he had been using, attendant circumstances making it apparent that death had resulted from electrical shock. Other people have been killed in their bathtubs in attempting to turn lamps on or off or to move electrical fans or heating appliances.

It is engineering practice to ground one side of all household power lines, i. e., 110 volt circuits, and this practice has been adopted to protect against fire hazard and the danger of electrical shock in cases of transformer breakdown or contact of transformer primary leads, carrying current ordinarily at from 2,200 to 2,300 volts, with the secondary wires which run into the consumer's house. While such grounding reduces this hazard, a hazard which is only occasionally present, it increases the low voltage hazard. Contact with the ungrounded side of the low voltage line, when some part of the body is in contact with the ground, becomes dangerous if the skin is wet enough to conduct. There are many places in a dwelling house where excellent electrical contact with the ground can be made. Water pipes, drain pipes, radiators, sinks and the conduits in

which the power wires run are all usually well grounded. A person in a bathtub, making through his wet skin an excellent contact with the grounded drain pipe, runs a deadly risk if he happens to touch the metallic shell of a fixture which is in electrical contact with the ungrounded side of the circuit. Fixtures are not supposed to be in this condition, but there are so many opportunities for them to be, or to become so, that the danger is ever present. The makers of electrical appliances endeavor to develop their products with a view to making them safer, and practice constantly improves. However, even the best equipment is subject to deterioration with use. Sometimes the user thinks himself qualified to undertake the apparently simple repair of his equipment. In so doing he may be setting a fatal trap for himself, even though the device may seem to function properly. To attempt to specify details of construction so as to cover all possible contingencies would result in an enormous increase in costs, much of it unnecessary, and even then occasional accidents would occur. It seems, therefore, desirable to acquaint the public with the fact that it may be dangerous to touch electric lamps and appliances with wet hands, especially when there are cuts and abrasions of the skin and particularly when there is a ground contact, as when one is in a bathtub. Damp cellars, laundries, chemical plants and, in general, places where there is danger of good ground contact and wet skin require exercise of especial care. The danger to men performing hard work with profuse sweating, particularly in hot places with the possibility of contact with grounded conductors, should be borne in mind by employers, and in especially hazardous situations short lines operated at very low voltage may be used. For such situations lamps are available which operate at 30 volts and even at 12 and 6 volts.

Many lamps are provided with chain pull switches. In some the chain contains an insulating link, but many do not have it. It would be good practice to require its general use, and existing installations may be made safer by tying a piece of silk ribbon to the chain, particularly in bathrooms, kitchens, cellars and other dangerous places.

It may be asked whether there is any case on record in which a human being has been killed by a voltage known not to be in excess of 110 volts. Such a case occurred in a hospital in Greater New York. A patient was prepared for medical diathermy of the chest. The apparatus was badly designed in that plugs of identical construction were attached to the patient wires and to those from the instrument which were to be plugged into the 110 volt building circuit. The attendant plugged the patient side into the service line by mistake and the patient was promptly killed. The ground did not here enter the circuit, and had high voltage been on the line fuses would have been blown out or lamps burned out.

It is futile to attempt longer to dismiss these cases as due to accidental high voltages. More lives will be saved if it is recognized that the danger of stimulation of the ventricles and the production of fibrillation are present when contact is made with a low voltage line when the skin is thoroughly wet or when the area of contact is large. The circumstances involving danger seem so simple that the public, when informed, should be able to protect itself, and it seems to me that it is the duty of the medical profession to assist in giving this information publicity.

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AORTIC STENOSIS WITH CALCIFICATION OF THE CUSPS

A DISTINCT CLINICAL ENTITY *

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There is a form of cardiac lesion, not infrequent in occurrence, which has a clinical picture so characteristic that it deserves more frequent recognition than it commonly receives. Its age and sex incidence, the character of the pathologic lesion, indicative of a slow development over a period of many years, and the probable long presence of physical signs with slight symptoms distinguish it from other commonly observed cardiac lesions and give rise to interesting speculations as to its etiology and why it differs in so many respects from other more frequently encountered forms of heart disease. Though it has been recognized for many years and is described in the majority of books on heart disease, it has not been discussed often in recent literature,[1] and it seems still to be considered relatively infrequently as a possibility in diagnosis; typical examples often fail of diagnosis. I refer to aortic stenosis with calcification of the cusps.

The characteristics of it are: (1) its occurrence chiefly in males relatively late in life; (2) the slow progression of the lesion with symptoms of cardiac decompensation appearing late, though not necessarily much prolonged after they develop; (3) the presence of a thrill and harsh murmur, both systolic in time, over the aortic area, often accompanied by a softer, more blowing, longer diastolic murmur; (4) considerable hypertrophy of the heart; (5) often a characteristic type of pulse and normal or decreased pulse pressure; (6) the absence of anything in the latter half of life throwing light on the etiology, and (7) the finding at autopsy of a very heavy heart with the aortic valve greatly narrowed by thickened cusps, often interadherent to each other, which contain masses of calcification, while the other valves are normal or only dilated.

A review of my own material at the Peter Bent Brigham Hospital shows fifty-seven fatal cases in which autopsy was performed, with the diagnosis of aortic stenosis alone or accompanying aortic insufficiency or mitral stenosis. Of these, twenty-one had the type of aortic lesion with calcification now under discussion, with the other valves of these hearts essentially normal. It is striking that besides these twenty-one patients with calcification and stenosis confined to the aortic valve there was but one (a man, aged 66) with stenosis of the aortic valve unaccompanied by calcification of the cusps and with the other valves normal; this otherwise was similar to the group of twenty-one cases.

Thirteen of the twenty-one patients were 50 or more years of age, while seven of them were 60 or over. Of the eight under 50, three were between 42 and 47. Five were less than 40; one each was 39, 38, 32, 30 and 25. In the series of Margolis and his associates [1] thirty-five were 50 or more years of age, three between 40 and 49 and three under 40. In Cabot's [2] series fifteen were 50 or over, seven between 40 and 49 and five under 40. Fifteen of my twenty-one patients were males. In Cabot's [2] series twenty-five of twenty-eight, and in that

* Read before the Association of American Physicians, Atlantic City, N. J., May 5, 1931.

1. Margolis, H. M.; Ziellessen, F. O., and Barnes, A. R.: Am. Heart J. 6: 349 (Feb.) 1931.
2. Cabot, R. C.: Facts on the Heart, Philadelphia, W. B. Saunders Company, 1926, p. 206.

of Margolis and his associates[1] thirty-four of forty-two, were males, a preponderance of males much greater than in other forms of cardiac disease.

The nature of the lesion revealed at autopsy makes it evident that the process is of long duration, for a sclerotic process with such massive deposits of calcium could not be one of rapid development. The marked degree of cardiac hypertrophy in my patients at the time that symptoms and signs had become marked is consistent with slow development and long duration. The numerous cases in the series of Margolis and his associates[1] in which there was no or only slight hypertrophy point in the same direction, for it is to be recalled that only six of their forty-two patients came to the hospital complaining of cardiac symptoms; this indicated that while the aortic lesion already had developed, further progression in it and more time were needed for the appearance of signs of cardiac failure if heavy hearts are the rule in fatal cases, as indicated in my series, in which there was no heart that weighed less than 500 Gm.

Symptomatology in many cases is curiously at variance with the pathologic evidence of long duration, for often these patients live but a relatively short time after they have developed symptoms. Some, however, give a story of long persisting dyspnea with marked increase taking place only shortly before death. Whereas all of my patients came to the hospital because of symptoms largely, if not entirely, of cardiac failure, in other series, notably that of Margolis and his associates,[1] many of the patients did not come for examination primarily on account of symptoms referable to the heart (thirty-six of forty-two in their series). This suggests that, although the aortic stenosis may be marked in degree, cardiac function may remain efficient, indicating that the lesion often is one of long duration before it causes much disturbance in function. This is in accord with the not infrequent statement that years ago the patient had been told there was a murmur or that heart disease was present and physical activity should be restricted, or life insurance had been refused on account of heart disease, and yet there had been no cardiac symptoms until recently. All of this indicates that whatever causes the lesion of the valve, this cause has little deleterious effect on the myocardium, so that the heart muscle is able for a long period to compensate for the mechanical disability due to a narrowed valve orifice, a narrowing that probably has taken place gradually without causing any symptoms of cardiac insufficiency. When symptoms develop, they are in no way characteristic; they are those usual to cardiac decompensation with a moderate admixture, in some cases, of anginal or anginoid pains, the latter apparently less than might reasonably be anticipated in cardiac patients of whom such a considerable number are past 50.

The physical signs of this form of heart disease are those of aortic stenosis with a relatively slight or no aortic insufficiency. These patients typically show a systolic murmur, usually loud and rough, as a rule heard all over the precordium but maximal in degree at the base of the heart and particularly in the second right intercostal space near the sternum, accompanied by a thrill in the latter position. The systolic thrill may be felt only during expiration when the anterior borders of the lung thin out and retract from the sternal region, or it may wax and wane with respiration or be present throughout the respiratory cycle without varying in degree. The systolic murmur at times is loudest at the apical region and in either position may lack the quality of loud harshness, particularly if decompensation is very advanced.

With the systolic murmur there may be heard a longer, softer, more blowing diastolic murmur commencing with the onset of diastole and continuing in varying degree through diastole. More often the diastolic murmur is heard best to the left of the sternum in the third and fourth intercostal spaces, though it may be loudest in the aortic area. There is no apical murmur indicative of mitral stenosis. If cardiac decompensation is marked, the thrill may be absent and the murmur lose its harshness and loudness, and so this diagnostic evidence often disappears a few days before death. In some patients, even with good function, the thrill may not be present. However, it is to be remembered that the ability to feel thrills seems to require training, and in my experience many physicians fail to detect thrills when they are present. The second sound in the aortic area usually is decreased in intensity and may not be heard at all.

In the majority of patients in the group reported here, rhythm was regular. In this fatal group studied at the Peter Bent Brigham Hospital electrocardiograms were made on sixteen of twenty-one patients and showed left ventricular preponderance in thirteen, in five of which this was the only abnormality; delayed auriculoventricular conduction and defective intraventricular conduction occurred three times each; extrasystoles, nodal rhythm and auricular fibrillation, twice each, and abnormal ventricular complex, right bundle branch block and auricular flutter, once each. The heart is greatly enlarged, as a rule, when there are symptoms of decompensation.

The pulse tends toward small volume without quick rise and fall, the pulsus parvus et tardus of older writers. A plateau type often can be made out. The pulse is definitely not of the Corrigan type, with a few exceptions, and a capillary pulse is extremely rare if ever present.

Readings of the blood pressure reflect these palpatory characteristics of the pulse. Systolic pressure is not elevated or only moderately so except in the rare patient with hypertension (two in this series); diastolic pressure is decreased or normal, occasionally increased; as a result, pulse pressure often is normal or decreased. At times pulse pressure is increased chiefly as the result of lowered diastolic pressure when aortic regurgitation is more marked or from disproportionately high systolic pressure, as in two cases of hypertension. The readings of the systolic and diastolic blood pressure in this group of patients were: 95/55, 105/70, 106/60, 110/60, 115/90, 118/30, 118/68, 120/55, 120/95, 124/76, 124/100, 125/50, 125/58, 126/82, 134/90, 136/50, 152/100, 170/80, 207/120 and 240/100, giving pulse pressures arranged in sequence of their increase as follows: 24, 25, 25, 35, 40, 44, 44, 46, 48, 50, 50, 52, 65, 67, 75, 86, 87, 88, 90 and 140, of which eight were normal, four below normal and eight above normal. In other words, pulse and blood pressures point to only a slight degree of aortic insufficiency even though there is a long diastolic murmur. This blood pressure relationship should suggest stenosis of the aortic valve as the dominant lesion in the absence of any sign of mitral stenosis when there is a loud, rough systolic murmur heard best at the base of the heart, even if there is a prominent diastolic murmur; the diagnosis is almost certain when, in addition, a systolic thrill is felt in the aortic area.

Almost none of these patients describe anything in the later years antecedent to the development of cardiac symptoms which could in any way be regarded as the cause of the lesion. Not infrequently a cold, bronchitis, influenza or bronchopneumonia seems to be the precipitating cause of cardiac insufficiency. Syphilis definitely plays no part in the etiology. Wassermann reactions were obtained in twenty of the twenty-one patients, and all but two were negative. At autopsy the aorta in these two patients showed the typical picture of syphilitic aortitis, but the appearance of the lesion in the aortic valve was in no way different from that seen in the other patients without evidences of any sort of syphilitic disease. In none of the others was there any suggestion of syphilitic lesion.

The etiologic relation of this lesion to rheumatic fever is very probable. Eleven of the twenty-one patients had a definite history of typical rheumatic fever from thirteen to forty-eight years before the onset of symptoms of cardiac insufficiency; some had had repeated attacks. In two other cases there was an indefinite history of rheumatic fever. In many patients of my series the patients were too ill when seen to be able to give a satisfactory history. Many were old enough to have had many years elapse since a rheumatic infection of youth, and they may have failed to recall an attack that had occurred. In one of the patients, still living, in whom the diagnosis was confirmed by roentgen demonstration of the calcification, the mother recalled an attack of rheumatic fever at the age of 12 which the patient did not remember, illustrating the difficulty of being certain of that part of a history which dates back to the early years of youth. The history in most of the patients was not taken with the point of view of diligent inquiry as to past rheumatic fever or any of its manifestations which might have been revealed by special direct questioning. I am inclined to believe a closer questioning of patients, not as yet seriously ill, would have yielded many more histories of antecedent rheumatic fever, especially of rheumatic fever in youth. Consequently, taking all of this into consideration a rheumatic etiology would seem highly probable from a study of these histories, a view that I have come to since my statement to the contrary in 1928 in Oxford Monographs on Diagnosis and Treatment.[3]

Cabot [2] has suggested that this lesion might be initiated by a bacterial endocarditis and says that healed kidney infarcts would suggest this etiology. In none of my patients was there anything in the past history to suggest bacterial endocarditis, and in all but three cases the kidneys showed nothing to suggest an old infarct, one of these being very doubtful. In three of the cases an acute bacterial endocarditis was superimposed on the old lesion.

It has been suggested that the lesion is part of the process of arteriosclerosis with calcification. Against this is the striking absence of marked atheroma of the aorta in most of my series, it being absent or only moderate in nineteen of the twenty-one patients.

The conditions found at autopsy are striking. In all my cases the heart was markedly hypertrophied, the weights being 505, 520, 540, 550, 560, 560, 600, 610, 620, 620, 620, 675, 680, 720, 720, 740, 750, 780, 950 and 1,045 Gm., an average of 680 Gm.

In none were the tricuspid, mitral or pulmonic valves structurally abnormal except for an occasional thickening of the leaflets. In contrast, the aortic valve was greatly stenosed, the orifice often being reduced to a mere slit, usually triangular in form. Valve cusps were interadherent, thickened and composed largely of calcareous material, sometimes quite evenly distributed in the thickened valves, at other times heaped up in irregular warty masses on the upper or lower surfaces of the cusps or forming great deposits at the root of the cusps. The cusps largely were rigidly fixed, and often complete closure of the orifice was evidently impossible, though there was too small an aperture for any considerable regurgitation of blood. In striking contrast to the calcification in and about the aortic cusps, the aorta itself showed slight degrees of atheroma, sometimes none. In only two of twenty-one patients was the aorta described as showing any considerable degree of calcification. Sometimes the sclerosis and calcification involved the coronary orifices behind the cusp so as to narrow them, but the coronary arteries usually showed relatively little arteriosclerosis.

The lesion in the aortic valve in these patients in appearance and distribution in no way resembled the aortic valve lesion of syphilis. In two of my cases there was definite syphilitic aortitis, confirmed by histologic examination of the aorta. However, in these the lesion of the aortic valve was similar to that in the patients without syphilitic aortitis. On the other hand, in the interadherence of the cusps and the tendency to form in place of the cusps a sort of diaphragm, there was much resemblance to the usual process seen in mitral stenosis of rheumatic heart disease. In the latter, deposits of lime salts are common enough though rare in such massive form as in these aortic valves. It is well known that, in rheumatic mitral stenosis, involvement of the aortic valve, causing aortic insufficiency and stenosis, is common, and in some of these calcification occurs in the aortic valves but not often in such massive form as in the cases described.

From observing the calcareous deposits in these heart valves it is evident that roentgenography with proper technic should often demonstrate the calcification in the living patient. A short time exposure with a concentration of powerful roentgen rays in the proper region probably will demonstrate the lesion and make certain a diagnosis, already reasonably sure from history and physical examination. With the latter information in hand the clinician should indicate to the roentgenologist that he desires a roentgen examination made to demonstrate calcification in the region of the aortic valve. When this is done, I am sure that the number of positive roentgen signs of calcified aortic valves will be greatly increased and this form of cardiac lesion come to be diagnosed accurately in a large percentage of the cases; the diagnosis of this form of heart disease then will become fairly common.

In differential diagnosis the greatest confusion will come in distinguishing between aortic stenosis with calcification of the cusps and arteriosclerotic dilatation of the aorta. In both a systolic murmur is heard; in the former it is usually harsher and louder than in the latter. In the stenosis a thrill is usual; in the latter it is rarely present and when present is finer and less well marked. In both an accompanying diastolic murmur may be heard, more commonly in aortic stenosis than in arteriosclerotic dilatation of the aorta. Roentgen study will help in distinguishing the two if it shows calcification in the region of the aortic valve or if it shows dilatation of the aorta, the latter not being very frequent with the stenosis. In arteriosclerotic dilatation of the aorta roentgenography will often demonstrate

3. Christian, H. A.: Oxford Monographs on Diagnosis and Treatment, The Diagnosis and Treatment of Diseases of the Heart, New York, Oxford University Press 3: 89-119, 1928.

plaques of calcification in the aorta. Rarely is there any difficulty in distinguishing between aortic stenosis with calcification and syphilitic aortic insufficiency.

SUMMARY AND CONCLUSIONS

There is a form of cardiac lesion, not infrequent, which has a clinical picture so characteristic that it deserves more frequent recognition than it commonly receives. Its characteristics are: (1) occurrence chiefly in males relatively late in life; (2) slow progression of the lesion with symptoms of decompensation appearing late, though not necessarily prolonged after their development; (3) the presence of a systolic thrill and harsh, loud systolic [illegible] in the aortic area, with or without a diastolic murmur of aortic insufficiency; (4) often a characteristic pulse with a normal or decreased pulse pressure; (5) enlargement of the heart; (6) a history of rheumatism early in life; (7) roentgenographic demonstration of calcification in the region of the aortic valve, and (8) at autopsy stenosis of the aorta with deposits of calcification in the cusps—while the other valves are not organically abnormal—and great hypertrophy of the heart. Twenty-one such cases are reported in which the diagnosis was confirmed by autopsy.

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FOUR TYPES OF ENCEPHALITIS

(1) MUMPS MENINGO-ENCEPHALITIS; (2) POSTVACCINAL ENCEPHALITIS; (3) MEASLES ENCEPHALITIS; (4) HEMORRHAGIC ENCEPHALITIS DUE TO ARSENIC THERAPY—SULPHARSPHENAMINE

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Four types of encephalitis recently encountered in my practice seem of sufficient interest to report. They consist of one case each of mumps meningo-encephalitis, postvaccinal encephalitis, measles encephalitis, and hemorrhagic encephalitis following arsenical therapy (sulpharsphenamine).

MUMPS MENIGO-ENCEPHALITIS

CASE 1.—R. E., aged 8 years, was admitted to Epworth Hospital, March 27, 1928. One week previously he had had a bilateral parotitis. In five days the swelling began to subside, but the patient complained of headache, vomited and became increasingly drowsy. The family physician noted a definite cervical rigidity and advised hospitalization. On admission he was pale, acutely ill, and very drowsy. His temperature was 103 F. He was aroused with difficulty and was poorly oriented. The pupils reacted normally. Strabismus was not present. The eyegrounds showed venous engorgement and a general hyperemia of the retina but no papilledema. Marked cervical rigidity was present but no opisthotonos. No residual swelling of the parotids or submaxillary glands was noticed. The chest was clear. An old, previously recognized mitral murmur was present. The heart rate was 80. The Kernig and Brudzinski reflexes were positive. The patellar reflexes were obtained with difficulty. Tache cérébrale was present.

Spinal punctures were done on admission, and on the third and twelfth days. The results are shown in the accompanying table.

The temperature became normal within five days. The sensorium was clear by the end of a week. The cervical rigidity had not entirely cleared up until about the tenth day. The patient was up in a chair on the eleventh day and went home on the fourteenth day. He has been seen at intervals over the course of more than two years and has had no apparent sequelae.

As recently as March, 1928, Fábián [1] described three cases of mumps encephalitis which he was unable to differentiate clinically from tuberculous meningitis. Obviously the absence of tubercle bacilli from the spinal fluid is not a satisfactory differential point between the two diseases.

Most textbooks merely mention mumps encephalitis as a rare occurrence. Ruhräh [2] reviews the earliest described cases of involvement of the nervous system in mumps—a fatal case having been reported in 1758 by Hamilton.[3]

Acker [4] has described in detail the cerebral and meningeal lesions of epidemic parotitis. Morquio [5] had observed several cases in Montevideo, some of which simulated tuberculous meningitis, while others had a stormy onset with high fever, convulsions and contractures suggesting an acute meningitis. Vomiting was a prominent symptom in his series of cases, in one of which it continued for two weeks. He presented some cases in which the encephalitis was the only apparent manifestation of the disease. In one the encephalitis appeared two months after the parotitis.

Wollstein [6] mentions the possibility that the mumps virus may reach the meninges by way of the lymphatics from the nasopharynx. She has produced mumps experimentally in animals by means of a filtrable virus. Kermorgant [7] described a spirochete and a symbiotic bacillus with which he claimed to produce the disease and also specific immune reactions.

The pathology of mumps encephalitis has been described in some detail by Larkin.[8] In a fatal case in a young adult he found extensive accumulation of slightly turbid fluid in the cisterna magna. The pia-arachnoid was congested. There were scattered areas of perivascular exudate in the form of grayish yellow lines following the course of the blood vessels. The ventricles were slightly distended. The fluid was clear. The ependyma was slightly granular. Cultures were negative. Microsections showed the pia-arachnoid densely infiltrated with large and small mononuclear

Spinal Fluid in Mumps Meningo-Encephalitis

	Date		
	2/25/28	2/29/28	3/10/28
Globulin	Trace	+	++
Cell count	495	645	585
Lymphocytes	95%	93%	94%
Erythrocytes	Many	Many	None
Dextrose	55.5 mg.	51.1 mg.	57.1 mg.
Chlorides	.....	715 mg.	755 mg.
Culture	Sterile	Sterile	Sterile
Smear	Negative	Negative	Negative
Colloidal gold	.....	0000144210	
Levinson	.....	.....	4 2 5 3

cells, perivascular primarily but also extending into the areolar tissues and cortex, with similar cells adherent to the arterial intima. Gordon [9] inoculated monkeys with the filtrate from the throat gargle of a case of mumps, which produced perivascular infiltration and foci of leukocytes scattered in the gray matter, lesions characteristic of meningo-encephalitis. Four monkeys

1. Fábián, Ludwig: Monatschr. f. Kinderh. **38**: 210 (March) 1928.
2. Ruhräh, John, in Abt, I. A.: Pediatrics, Philadelphia, W. B. Saunders Company **6**: 287, 1925.
3. Hamilton, R.: Tr. Roy. Soc. Edinburgh **2**: 59, 1790.
4. Acker, G. H.: Am. J. Obst. **18**: 386 (Aug.) 1913.
5. Morquio, L.: An. de. Fac. de med. Montevideo **7**: 23 (March) 1922.
6. Wollstein, Martha: Nelson Loose Leaf System of Medicine **1**: 560; J. Exper. Med. **28**: 377 (Oct.) 1918.
7. Kermorgant, Y.: Ann. de l'Inst. Pasteur **39**: 565 (July) 1925.
8. Larkin, W. R.: Illinois M. J. **38**: 133 (Aug.) 1920.
9. Gordon, M. H.: Lancet **1**: 652 (March 26) 1927.

injected intracerebrally died within from three to nine days.

The spinal fluid in mumps has been studied by a number of observers. Monod [10] wrote his inaugural thesis in Paris on this subject in 1902. He described a cerebrospinal lymphocytosis even in the absence of meningeal signs. Feiling [11] corroborated the finding of other observers that a lymphocytosis may occur with or without meningeal symptoms.

The clinical picture is usually that produced by any acute type of meningitis. The first symptom commonly occurring at the height of the disease usually is a rise in temperature associated with severe headache and vomiting. Stupor may ensue. Delirium does occur but is not common. Voisin [12] described a case in which the first symptom was delirium, followed later by parotitis and orchitis.

The sequelae that have occurred, fortunately rarely, are strabismus, lack of accommodation, deafness, hemiplegia, aphasia, tremors, nystagmus, involvement of the cranial nerves and peripheral neuritis. Some of these symptoms may appear for a while and then disappear.

A differential diagnosis from tuberculous meningitis cannot be made from the usual routine laboratory examination alone. Consideration of the dextrose and chloride content of the spinal fluid is helpful in making a differential diagnosis. The dextrose determination of the spinal fluid is said to be of more value if compared with the dextrose content of the blood. The dextrose of the spinal fluid is always relatively and usually *actually* low in tuberculous meningitis and normal or slightly increased in mumps meningitis; in epidemic encephalitis it is usually consistently high. The chlorides are *relatively* low in tuberculous meningitis (from 600 to 690 mg.) and slightly increased in mumps meningitis (from 715 to 755 mg.).

Relief from symptoms may be procured by symptomatic treatment—the use of an ice bag to the head, sedatives and the like. The greatest benefit, observed in several cases seen in the navy during the war, was obtained by repeated, slow removal of fairly large amounts of spinal fluid. The headache and delirium seemed especially favorably influenced by this procedure. Acting on the assertion that mumps is caused by a spirochete, Molinelli [13] treated 100 cases of mumps with arsenicals with entirely negative results. Recovery without sequelae from mumps meningitis is the rule.

POSTVACCINAL ENCEPHALITIS

CASE 2.—T. W., aged 5 years, had loss of consciousness and general muscular rigidity. His father and mother were living and well and he had two sisters under school age, living and well.

The patient had had measles and whooping cough, uncomplicated, several years previously. His general health was good. He had not been previously vaccinated but was vaccinated at school, Nov. 27, 1929.

The present illness began two days later, November 29, with a severe pain in the left thigh. On the following day he also complained of pain in the left knee and ankle and of a very severe headache. During the night of November 30 he became irrational. On the morning of December 1, when he was first seen by me, he had a series of generalized convulsions. Between convulsions he displayed a spastic paralysis of all extremities, trismus and opisthotonos.

Physical examination the morning of December 1 revealed the foregoing neuromuscular signs. The rectal temperature was 104.2 F. The pupils were difficult to examine because of the upward rotation and fixation of the eyeballs. A general examination of the cardiorespiratory system and the abdomen was negative. The small vaccination wound was in excellent condition. Reflexes were absent. The Babinski reflex was not obtained.

A mottling of the skin of the extremities appeared which developed into a rather diffuse purpuric eruption during the last few hours of life.

The patient was in the hospital too short a time to have complete laboratory examinations made. A spinal puncture, however, showed a clear, colorless fluid under slightly increased pressure. The cell count was 2; globulin was negative; there were no erythrocytes; dextrose was 110 mg. per hundred cubic centimeters. A postmortem blood culture was negative except for a few colonies of staphylococcus.

Sedatives and fluids were freely administered, but there was no amelioration of the spastic convulsive state. The last temperature taken was 105.2 F. The patient died four hours after admission. Autopsy was refused.

This case corresponds clinically with those described by Flexner.[14] Only two, however, of his collected series presented such an early onset of symptoms as ours, two days after vaccination.

A cousin of the patient was reported by the family to have died in a similar manner five years previously after vaccination. I have been unable to verify or nullify this report. It is, however, of interest to note that two cases were reported in one family in Holland.

Four cases of this type have been reported in this country by Ford [15] and one by Flexner [14] in his excellent review of the subject. The largest series of cases was reported from England and Holland. The first probable one was reported by Comby [16] in 1905.

Flexner [14] stated that "postvaccinal encephalitis is a disease complex of striking individual nature, in the sense that it presents a consistent pathologic picture, clearly separable from epidemic encephalitis."

Perdrau and Turnbull and McIntosh [17] have described the pathologic picture. They have shown that perivascular demyelination is the essential and characteristic lesion. Demyelination—a rarefaction of the tissues in contact with the vessel walls, patchy in distribution—takes place in point of time before the cellular infiltration. There is no change in the vessels themselves. The process is entirely perivascular. In the more severe forms the finer axis cylinder fibers are destroyed. Similar lesions occur in cases of measles encephalitis. Gruneberg [18] treated two patients with serum from recently vaccinated persons with favorable results. When recovery takes place it is complete, in contrast with conditions seen after epidemic encephalitis. The frequent occurrence of trismus may have led to erroneous diagnoses of tetanus. As to the etiology of the disease, little is known. Flexner discusses the various theories in detail. Probably the vaccine virus itself, however, is not the causative agent. The average time interval between vaccination and onset of symptoms is from ten to thirteen days. The mortality of the collected English cases is 50 per cent; of the Dutch, 35 per cent.

MEASLES ENCEPHALITIS

CASE 3.—M. M., a boy, aged 7 years, an only child, who had previously been well, acquired measles about ten days previous to admission to the hospital, March 16, 1929. About five days before entrance the patient complained of great difficulty in urinating, about fifteen minutes of effort having been required

10. Monod: Thèse de Paris, 1902.
11. Feiling, A.: Lancet **2**: 71, 1913.
12. Voisin, R.: Bull. et mém. Soc. méd. d. hôp. de Paris **40**: 223, 1916.
13. Molinelli, E. A.: Semana med. **1**: 481 (March 11) 1926.
14. Flexner, Simon: Postvaccinal Encephalitis and Allied Conditions, J. A. M. A. **94**: 305-311 (Feb. 1) 1930.
15. Ford, F. R.: Bull. Johns Hopkins Hosp. **43**: 140 (Sept.) 1928.
16. Comby, quoted by Flexner (footnote 14).
17. Turnbull, H. M., and McIntosh, James: Brit. J. Exper. Path. **7**: 181 (Aug.) 1926.
18. Gruneberg: Klin. Wchnschr. **9**: 1127 (June 14) 1930.

before a stream could be started. For nearly three days before admission he had been repeatedly catheterized by his family physician. On the day preceding the onset of bladder symptoms it was noticed that the patient was very nervous and irritable. Since then he had been much less responsive and less active than usual. It was also noted that he had developed fecal incontinence.

His temperature was 98.2 F., pulse 92, respiration 20. He was a well nourished, well developed boy. He acted rather drowsy and responded sluggishly to questions. The pupil of the left eye was larger than the right. On exposure to light the pupils alternately dilated and contracted (hippus). The eyegrounds were normal. Examination of the throat, chest and heart were negative. Examination of the abdomen was negative except for the distended bladder. Knee jerks were obtained with difficulty. Kernig and Brudzinski signs and plantar stimulation were negative. The rectal sphincter was markedly relaxed.

During a five day stay in the hospital a retention catheter was kept in the bladder for an initial period of forty-eight hours and for a second period of twenty-four hours. He then was able to void with some difficulty and pain. When examined several months later the sensorium was clear, all reflexes were normal and there was no urinary difficulty nor lack of rectal sphincter control.

The onset after measles with irritability, followed by drowsiness, apathy and unequal pupils, with loss of rectal and bladder sphincter control, corresponds to conditions described as measles encephalitis with cord changes. As this case was not seen during the acute stage, spinal fluid examination was not made. The cases of measles encephalitis apparently make remarkably complete recoveries, as do also those of nonfatal postvaccinal encephalitis.

A report of various clinical types of nervous phenomena following measles together with a summary of the literature is made by Ford.[19] The types described were characterized by (1) diffuse cerebral involvement with drowsiness or stupor on the fourth to the sixth day of the eruption, associated with a secondary rise of temperature; spinal fluid containing an increase in cells with no or very little increase in globulin; sugar content normal; rapid recovery without residual symptoms; (2) multiple focal cerebral symptoms with motor disturbances, personality and intelligence changes; no neurologic signs; (3) hemiplegias and aphasias; (4) cerebellar syndromes, with ataxias and intentional tremors, and (5) paraplegias and spinal cord syndromes, such as flaccid paralysis of the legs, ascending paralysis, loss of sphincter control and sensory changes.

Greenfield[20] minutely describes the perivascular infiltration with round cells and the characteristic perivascular zones of demyelination. He points out the clinical, pathologic and epidemiologic similarity of postmeasles and postvaccinal encephalitis and suggests that both diseases may be caused by a virus which spreads by epidemic waves but produces no disease unless activated by the exanthem.

ARSENICAL HEMORRHAGIC ENCEPHALITIS FOLLOWING SULPHARSPHENAMINE

CASE 4.—B. W., aged 2 years, admitted to Epworth Hospital, Aug. 24, 1930, in convulsions, had a father aged 22, a mother aged 23, and one sister, aged 1 year, all serologically syphilitic.

The patient was first seen in the office, May 31, 1930. He presented no clinical manifestations of syphilis. A blood Wassermann test was done because of the known syphilitic condition of his sister, who was brought in with skin lesions, enlarged spleen and a generalized lymphadenopathy. He was given inunctions of mercury and eight weekly intramuscular injections of sulpharsphenamine, the first four doses being 0.1 mg. and the last four 0.2 mg. There was no evidence of reaction following the first seven treatments. Repeated urine examinations were negative. He had had no other illnesses.

July 24, five days after the eighth intramuscular injection of sulpharsphenamine, dose 0.2 mg., a dose of 0.15 mg. from the same 0.4 mg. ampule being given to his sister immediately following his treatment. The first symptom noted was a slight drowsiness, followed within an hour by a severe generalized convulsion. He was taken immediately to the hospital, where the administration of chloroform, chloral and bromides, and hot packs had little influence on the convulsive state. The temperature was 101 F.; white blood count, 19,200; urine showed albumin 2+; acetone was microscopically negative.

Spinal fluid on the day of admission showed a cell count of 2, globulin 4+, dextrose 90 mg., Wassermann reaction 2+. The following day the white cell count was 15, with 1,058 red blood cells per cubic millimeter. The patient's rigidity increased; generalized twitching and convulsive movements were continuous. The temperature rose to 107.2 F. before death, the second day after admission.

Postmortem examination (extracted from the report of Dr. A. S. Giordano) revealed the pia showing considerable edema. On serial section of the brain there were found petechial and punctate areas of hemorrhage throughout the cerebral hemispheres. Microscopic examination revealed foci of perivascular hemorrhage, with leukocytic infiltration. The mercuric bromide paper test gave no stain with 1 Gm. of dried brain tissue.

There are several reports in the literature of nervous complications following arsenical therapy, particularly arsphenamine and neoarsphenamine. There is a paucity of reports of such complications, however, following the administration of sulpharsphenamine as in this case. Williams[21] reports one such case in an adult and Post[22] another with postmortem observations. I have discovered no case described in a child.

The pathologic picture produced is similar in all types of arsenical therapy. The brain in all cases described is edematous and congested. Cut blood vessels bleed freely. Microscopically there is extensive capillary hemorrhage, most marked in the roof and lateral wall of the fourth ventricle, pons and corpus callosum. In places the capillary hemorrhages are so numerous and diffuse that they fuse to simulate one massive hemorrhage. The walls of many vessels show infiltration with lymphocytes and polymorphonuclear leukocytes. This infiltration is not in the perivascular lymph spaces as seen in epidemic encephalitis and in poliomyelitis.

One theory proposed by Scott and Moore[23] is that the destructive and dilating action of arsphenamine on the blood vessels is not counteracted by epinephrine, which is deficient because of arsenical destruction of the suprarenals.

The toxic effect of the arsphenamines is usually attributed to the action of the arsenic, being harmful to the host as well as to the invading organism. Black[24] thinks that the benzene ring may be a toxic factor. The British Research Council, however, has taken the stand that such terms as anaphylactic and anaphylactoid reactions should be avoided, that acute vasomotor phenomena, seen occasionally after the administration of arsphenamine compounds, should be described as such without reference to doubtful explanations. Ehrlich (quoted by Gaus and Asnis[25]) stated that the cause of untoward symptoms is to be found in the patient himself, not in the drug, granting a correct technic has been used. This would seem to be exemplified by this patient, whose younger sister was treated with the same ampule immediately preceding her brother's treatment, with no reaction whatever.

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20. Greenfield, J. G.: Brain **52**: 171-195 (July) 1929.
21. Williams, J. R., and Pfulse, H. R.: New York State J. Med. **29**: 1071-1073 (Sept.) 1929.
22. Post, C. D.: Am. J. Syph. **11**: 444-446 (July) 1927.
23. Scott, Ernest; and Moore, R. A.: Am. J. Syph. **12**: 252 (April) 1928.
24. Black, N.: Canad. M. A. J. **22**: 673-674 (May) 1930.
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Dickens [26] reports a case in an adult of recovery from hemorrhagic encephalitis induced by neoarsphenamine, following the administration of sodium thiosulphate. This, possibly augmented by the administration of epinephrine, is the treatment of choice.

The South Bend Clinic.

MENTAL DERANGEMENTS IN HYPOTHYROIDISM

THEIR MISLEADING EFFECTS IN DIAGNOSIS *

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Our purpose in this contribution is to call attention to two points that are not infrequently illustrated in cases of decreased thyroid functioning:

1. The classic mental picture of myxedema is easily recognized; but decreased thyroid secretion may show itself through mental symptoms and signs which obscure the actual cause of the disease and mislead the diagnostician.

2. When mental derangement is severe and consists both in a slowing up of the intellect and in periods of intense fear, restlessness, hallucinations and delusions, coupled with active resistance, not only does it obscure the disease picture but it may also make it impossible for the physician to apply a basal metabolism test or even to test the blood pressure. In these cases a wrong diagnosis is often made.

To illustrate these points, the records of this hospital show several cases in which the possibility of hypothyroidism was present but in which this possibility apparently was overlooked. A typical case of this sort was that of a man, aged 55, examined in the Psychopathic Hospital many years ago, whose condition was diagnosed as pernicious anemia. The blood picture as recorded does not suggest such a process, hemoglobin having been 80 per cent and the red cells 3,800,000, with no distortions of the red cells. The man's eyelids and cheeks were puffy, boggy and relaxed and he continually wore a doleful expression. The hair of the scalp had become sparse, his eyebrows and eyelashes were thinned out, and all of his pubic hair had disappeared. His skin was described as dry and glossy and his fingers were rough. At times he complained of numbness of his hands. He would fall asleep when trying to think or attend to any task, and he had come to sleep as much as ten or eleven hours each day. He had grown suspicious; he had hallucinations and delusions that people were watching him and seeking to interfere with him. His thought processes were cloudy and greatly retarded.

It seems to us probable here that the activity of the hallucinations and suspicions had beclouded the significant signs of hypothyroid functioning and led to error in their interpretation.

A number of writers have discussed conditions of this sort in recent literature. Ziegler [1] gives an interesting presentation of the history and the literature of myxedema and recalls the array of mental signs reported before the Clinical Society of London in 1883. Among these mental derangements they found conspicuous slowing up of mental process, but they also mentioned defective and distorted thinking. In thirty-two out of fifty-three cases, irritability was present. Delusions and hallucinations were present in more than one third of the patients. Forms of mania as well as depression were seen. Other cases reported more recently have shown maniacal outbreaks and in some there were signs suggesting brain tumor because of the headaches, sleepiness and attacks of vomiting.

It is evident that a respectable proportion of hypothyroid patients show marked psychotic symptoms. Ziegler narrates the details of a case that he treated in which a woman showed active delusions of marital jealousy. The patient had been of a sociable, talkative and active nature and after thyroidectomy developed maniacal symptoms.

E. Jacobi [2] tells of a woman who had been active and intelligent up to her thirtieth year. She then suffered from fatigue and developed the signs of increased thyroid function. After the removal of the gland she developed the typical signs of hypothyroidism but, in addition, became difficult to manage and interfered with other people. She developed delusions and active hallucinations. She had sudden attacks of excitement in which she would rush to and fro. Her intellectual functions, such as memory and reasoning, were in the main preserved. She had a mild anemia, and the basal metabolic index was low. Thyroid treatment improved her physical condition and raised the basal metabolic rate to near normal, but her mental condition remained unimproved. The main thesis of Jacobi's paper is that hypothyroidism is able to stir up a latent schizophrenia. He evidently considers the mental signs here as indicative of that disease, a conclusion that seems questionable.

That myxedema has frequently been misdiagnosed, even when uncomplicated by psychotic states, has been shown in the literature. Collins,[3] in a recent paper, emphasizes this with cases of his own which had been treated for nephritis before he saw them. When there is a complicating psychosis, as in our patient, the condition is more difficult to diagnose.

One can readily understand that, with the body chemistry as seriously disturbed as it is under deficient thyroid secretion, the delicate cells of the brain must necessarily suffer. It is customary to see them slowed up and producing some confusion of consciousness. But, in addition to that, one must be prepared to find distortions of thought that will result in hallucinations misinterpretations and delusions. Now, if these delusions are of such a nature as to frighten the patient, there may be vigorous reactions in which the patient resorts to violence in self-defense. And these violent reactions easily deceive one and lead one to overlook the essential nature of the process.

Within the last year we have studied in the Psychopathic Hospital the condition of a woman, who, after thyroidectomy two years ago, rapidly slowed up both mentally and physically. She became confused and began to have bad dreams. Among the physical aspects there were stiffening of the muscles and a nonpitting swelling of the legs and face. She suddenly became apprehensive, interpreted the falling of an electric lamp as a bolt of lightning and was sure that electricity was being applied to torture her. She sprang from a window and ran away. She had delusions of persecution by

26. Dickens, P. F.: U. S. Nav. M. Bull. **26**: 192-195 (Jan.) 1928.

* From the Iowa State Psychopathic Hospital.

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2. Jacobi, E.: Arch. f. Psychiat. **86**: 426, 1929.

3. Collins, H. A.: The Diagnosis and Treatment of Myxoedema, J. Iowa M. Soc. **20**: 502 (Nov.) 1930.

the Catholic church; she was sure the nurses and doctors in her room were misbehaving sexually and that her brother-in-law was attempting to get into bed with her. This phase passed into a period of violence and depression. She then became fretful, actively discontented and assumed a bitter, sarcastic and obstructive attitude toward the attendants.

The patient had a mild secondary anemia. The basal metabolism reached minus 24.3. Under thyroid treatment the condition of the blood and the basal metabolic rate rapidly improved and she was discharged apparently well, but of course she depends on continued thyroid treatment. In this case are to be noted the period of marked apprehensiveness and the active impulsive behavior in self-defense.

The following recent case, studied in the Psychopathic Hospital, is of sufficient interest to make it worthy of attention. For two months we overlooked the relationship of the thyroid gland to the patient's trouble:

A married woman, aged 41, was referred to us because she had begun to talk incoherently after her little daughter had been slightly injured in an automobile accident. The mother became suspicious and excited. She thought people were trying to steal her daughter from her. She heard voices and began to clutch and hold objects that were near her and to seize the clothes of people who approached her. Her menstruation had been excessive for two years. She was sent to the Psychopathic Hospital heavily drugged with paraldehyde. Our examination showed a secondary anemia, the hemoglobin being 59 per cent, the red cells 3,200,000. Her face was yellow; her forehead and eyelids were puffy but without pitting. Her skin was dry.

On our first examination, the woman was cowering in a corner, dressed only in a bathrobe, and was very resistant and fearful. By her struggles she made any careful examination impossible. Her voice was flat and expressionless, with the singsong of formal stereotyped phrases, such as: "They said I didn't care whether my child was killed or not, but I do care"; "I just had to keep walking and the nurse tried to send me away; that hurt terribly"; "Herbert says he can't do no work for us because I keep talking too much"; "I am ashamed to lie down; everybody here has been good to me; I don't want any one to think I am lazy"; "excuse me one and all." At times she became terrified, stripped off her clothes and lay naked on the floor.

Her face as a rule was dull and expressionless and there was but little play of features even when she was apprehensive and resistant. All her movements were slow. The appetite was reduced to zero and the bowels were constipated. Her gait was unsteady; she was very weak and fell to the floor when slightly jostled.

The first impression made on us was that of a psychosis such as frequently is associated with secondary anemia. The anemia grew graver and sank to 40 per cent of hemoglobin, with 2,900,000 red cells.

On account of the interaction between the thyroid gland and the spleen in controlling the supply of red blood cells, thyroid was given to her on a purely empiric basis. Her obstructiveness made a basal metabolic study impossible and even prevented reading the blood pressure. Within ten days after thyroid was given, her mental condition changed for the better. On the twelfth day she was transferred to the quiet ward. She then rapidly became her normal self and the blood condition improved so that there were 72 per cent hemoglobin and 4,440,000 red cells. After three months in the hospital she returned home and to work. The mental signs had cleared up; her face was no longer puffy and her movements were normal. She had lost all fear and was particularly grateful for the treatment given her.

After her discharge, thyroid treatment was neglected at home and she was recalled to the hospital two months later in order to determine the basal metabolic rate. Her blood picture was practically unchanged, the skin had again become yellow, and the puffiness had appeared in the upper part of the face. The basal metabolic rate was then minus 19.

One of us then visited her home and learned from her husband that five years earlier he had noted a yellowing of her skin and that her bowels had become markedly constipated. About that time he had noted that her speech had become slow and her bodily movements weak and tardy. Three years later she had complained constantly of being cold and had forced him to keep the house so hot that members of the family complained. A year before our examination, the woman had become so slow in thought and movement that her children taunted her. She would forget immediately after saying something what she had said and had to be reminded of it. She would fall asleep at once on sitting down. Her housekeeping fell into confusion.

We kept her on thyroid treatment regularly and the basal metabolism rose rapidly to minus 11. When seen again, the eighth month after admission, it was plus 1. The blood picture has remained the same as on dismissal. Her menstruation has become normal and constipation has ceased. Her skin was pale, but the yellowness and all puffiness disappeared. She resumed full work. It is necessary for her to continue to use thyroid.

One interesting result of treatment has been her ability to meet strains in a normal way. Recently an older daughter, while on an automobile ride with an overgay party, ran into a telephone post and was seriously injured. The mother met this tragedy calmly and was able to deal with its results with common sense and in an efficient way. This is in contrast with the development of delusions, hallucinations and uncontrollable apprehensiveness that followed the slight accident to her little daughter less than a year ago.

SUMMARY

Insufficiency of thyroid secretion sometimes shows its most striking effects through malfunctioning of the brain cells. The patient may become depressed and apprehensive, thought may become slow and bodily movements retarded. The condition is easily mistaken for a depressed psychosis. Or there may be irritability and excitement leading to the diagnosis of mania. Patients may show thought distortion with hallucinations and delusions, which may become so bizarre as to be interpreted as signs of dementia praecox.

In these psychotic cases, even though the physical signs of myxedema are present, those signs are easily overlooked. This is partly because some physicians at once relegate patients who show mental derangement into a nimbus of mystery and infer that somatic disease cannot be expressed in mental symptomatology. A more excusable cause for overlooking evidence of physical disease is that the patient's mental attitude sometimes makes physical examination difficult or impossible.

Iowa State Psychopathic Hospital.

The Neurology of Old Age.—Neuronal changes consist primarily in a cell atrophy. This is of a numerical character, as the occurrence of a pure volumetric atrophy—i. e., reduction in the size of the constituent elements with maintenance of a full numerical complement—has never been proved. It is well known that with advancing years there is a generalized diminution in the nerve-cell count which is roughly proportional with age and also with the severity of concomitant mental deterioration. This diffuse cell-atrophy must be clearly distinguished from the patchy areas of atrophy in cerebrovascular disease. This particular feature of senility has been studied statistically in both human and animal brains. Thus, Ellis has found a progressive decrease in the number of Purkinje cells within the cerebellum after the age of 30 to 40. His own figures show that within an equivalent unit area there is to be expected at the age of 42, 823 cells; at 65, 591; at 79, 500; at 94, 462; at 100, 445.—Critchley, Macdonald: The Neurology of Old Age, *Lancet*, May 23, 1931, p. 1119.

AMEBIC GRANULOMAS OF THE LARGE BOWEL

THEIR CLINICAL RESEMBLANCE TO CARCINOMA

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Definite tumor formations resulting from amebas have been reported so rarely that the observation of three cases within a period of six months appears unique. Scant attention has been given the fact that a localized tumor presenting the clinical and gross pathologic picture of carcinoma of the large bowel can be caused by amebas. Six similar cases are reported. Kartulis [1] mentions an instance in which the wall of the large bowel reached the astounding thickness of 22 cm. Runyan and Herrick [2] described four cases showing massive amebic thickening of the cecum. They mistook one of their four reported cases for a tumor of the kidney, and another for carcinoma of the cecum. They diagnosed correctly their two remaining cases on the basis of their previous experience and on the finding of amebas in the stool. Almost complete obstruction of the bowel was present, necessitating complete resection of the cecum in all the cases. Harrison [3] reports the case of a man who had never lived outside of the state of Michigan. The patient had alternating diarrhea and constipation, bloody stools, loss of weight, and a palpable abdominal tumor mass. A barium enema showed that a pronounced filling defect was present in the hepatic flexure of the colon. A clinical diagnosis of carcinoma of the colon was made, and the patient was operated on. The hepatic flexure with the ascending colon and the first part of the transverse colon were found to be involved in an inflammatory tumor mass. An ileostomy was done and the appendix removed. The appendix showed amebic ulceration and, after operation, *Endameba histolytica* was found in the stool. The patient died, and no autopsy was obtained.

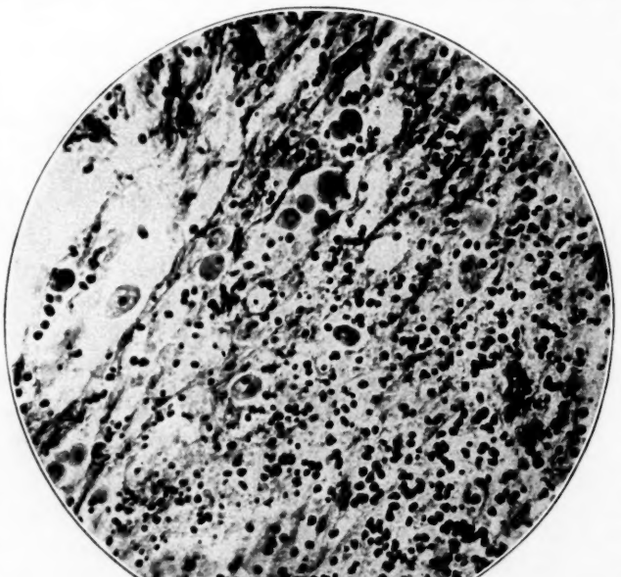

Fig. 1 (case 1).—Base of ulcer under high power, showing groups of amebas within the diphtheritic necrotic tissue.

Frequent references in the literature mention intestinal tumors or masses which disappeared following antiamebic therapy. In these cases the clinical picture often was that of a malignant growth. The necessity of a differential diagnosis of chronic amebiasis and carcinoma arises not infrequently as chronicity, loss of weight, obstructive disturbances, tumor masses, dysenteric symptoms and x-ray faults may be observed in either disease. We have seen several instances in which amebiasis and carcinoma of the large bowel were present at the same time.

Cope [4] refers to several cases in which amebiasis was mistaken for cancer and says: "When the inflammation caused by the amebae is subacute, the tissue reaction may be considerable, and great edema and swelling of the bowel wall result. Such swelling may be evident on palpation through the abdominal wall and may cause errors in diagnosis."

Leonard Rogers [5] mentions a number of instances in which confusion in the diagnosis of these two diseases occurred, for in chronic amebic infections of the cecum, very often there is no diarrhea, so that the nature of the trouble is not infrequently overlooked.

Lasnier [6] reports several instances in which palpable abdominal tumors were present in amebiasis and which disappeared under treatment.

James and Deeks [7] reported a case in which infiltration had nearly closed the lumen of the transverse colon and a clinical and roentgen diagnosis of a malignant growth was made. Repeated examinations of the stool in two hospitals of the Canal Zone failed to show amebas. Finally, operation was advised for carcinoma and refused. After three weeks, *Endameba histolytica* was found in the stool. Antiamebic treatment resulted in a complete recovery with disappearance of the tumor. In two additional cases, palpable tumors cleared up under treatment. One involved the cecum and the other the sigmoid.

In his article on pseudocancers of the colon of amebic origin, Desjardins [8] describes cases of amebiasis resembling cancer and clearing up under medical treatment.

The x-rays, especially with the barium enema, sometimes give valuable information in amebic cases. Considerable distortion of the bowel may be observed, caused by adhesions at the site of a deep amebic ulceration or perforation to adjacent organs or other portions of the intestine. We had one such case in which the x-rays showed nearly a complete stoppage near the hepatic flexure. Treatment directed against the amebas did not relieve the condition. At operation the ascending colon was found attached to the transverse colon by a mass of the consistency almost of cartilage. A somewhat similar condition was also present in case 1 in this

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2. Runyan, R. W., and Herrick, A. B.: Surgical Complications and Treatment of Intestinal Amebiasis, Am. J. Trop. Med. **5**: 137 (March) 1929.
3. Harrison, W. F.: The Histopathology of Appendiceal Amebiasis with Case Report, Ann. Int. Med. **2**: 1081 (April) 1929.
4. Cope, Zachary: Surgical Aspects of Dysentery, London, Oxford Medical Publications, 1920.
5. Rogers, Leonard: Recent Advances in Tropical Medicine, Philadelphia, P. Blakiston's Son & Co., 1928.
6. Lasnier, E. P.: Amebic Tumors in Large Intestines, Ann. de Fac. de med., Montevideo **3**, November-December, 1918.
7. James, W. M., and Deeks, W. E.: The Etiology, Symptomatology and Treatment of Intestinal Amebiasis, Am. J. Trop. Med. **5**: 97 (March) 1925.
8. Desjardins, A.: Colic Pseudo-Cancers of Amebic Origin, Bull. et mém. Soc. de chir. de Paris **21**: 443-452, 1929.

article. X-ray filling defects are produced by amebic thickening of the bowel. This usually involves such an extensive area of the intestine that the question of carcinoma does not arise. However, occasionally such masses are localized and may readily cause confusion in diagnosis. Not infrequently the thickened bowel may

Fig. 2 (case 2).—Base of ulcer under low power, showing diphtheritic membrane and edematous infiltrated granulation tissue. Amebas are found in the tissue outlined by the square.

be palpated through the abdominal wall. These conditions are usually encountered in cases of chronic amebiasis of long standing. The localization of the lesion is favored by stasis and is encountered most frequently in the cecum and in the flexures of the colon.

REPORT OF CASES

The diagnosis of chronic amebiasis was well established in the first patient, as one of us treated him in the army in 1918, following which all trace of him was lost until 1926, when he was again examined and *E. histolytica* again demonstrated in the stools. He was next seen in 1930.

CASE 1.—G. D., a man, aged 39, was admitted, Jan. 16, 1930, with a family history of carcinoma occurring three times on his mother's side. His health had been good until he contracted amebic dysentery in the Philippine Islands in 1916. After a short acute attack the symptoms ameliorated. He returned to the United States in 1918, suffering from occasional attacks of diarrhea and considerably run down in general health. Since then he had had recurrent attacks of diarrhea during which there were from three to six bowel movements a day, often containing mucus but never blood.

The patient had steadily lost weight and had become a chronic invalid. Digestive disturbances were never pronounced. Antiamebic treatment was carried out more or less constantly during these twelve years. A course of emetine bismuth iodide was given, in 1919, ipecac on several occasions, courses of chiniofon N. N. R., and in the fall of 1929 three courses of acetarsone N. N. R. were administered. When not taking the drugs mentioned he was given emetine hydrochloride hypodermically. His wife informed us that she had administered hundreds of such injections to him over a period of years. The emetine was the only drug that gave relief and that usually only temporarily. Early in 1929, the character of his symptoms changed, the diarrhea became less prominent and abdominal pain became a more frequent and serious symptom. Emetine hydrochloride no longer afforded relief. The attacks of pain gradually increased in severity and came on at shorter intervals. After a few months the pains became localized to the left upper quadrant and frequently radiated to the back.

In January, 1930, the pain was often excruciating, causing complete prostration, recurred nearly every day and sometimes continued for several days with but little relief. Bowel movements were about two daily and seemed normal. There was no especial digestive disturbance. The patient's weight was 34 pounds (15.4 Kg.) below that of 1916, the rapidity of the loss of weight being greater in the last few months.

The patient was moderately emaciated and appeared ill; his temperature was normal. There was slight sensitiveness all over the abdomen but especially in the left upper quadrant, and what was thought to be a slightly enlarged and palpable spleen was found. A gastro-intestinal roentgen series was negative. The barium enema was not done. The Wassermann test was negative. The blood and urine were normal, and a proctoscopic examination was negative. Examination of four formed and three liquid stools, following administration of salts, was negative. A urologic examination showed some obstruction in the left ureter close to the kidney, dilation of which gave definite but only temporary relief. Later it was impossible to pass an instrument through the obstruction.

February 24, Dr. Lloyd Reynolds operated on the patient and found the left ureter bound to the peritoneum by fibrous bands which were producing obstruction. The adhesions were released. At the same time a large mass was felt in the region of the splenic flexure of the colon, which was believed to be a carcinoma. A small gland adjacent to the mass was removed and proved to be inflammatory. Following operation there was no recurrence of the severe colicky pains, although considerable pain and discomfort continued in the same region but was of a different character from that previously experienced.

March 17, a barium enema showed a filling defect at the splenic flexure, an area of constriction in the midtransverse colon and lack of normal haustration in several places. On account of the extent of the lesions, involvement being shown in the splenic flexure and in the midtransverse colon, it was

Fig. 3 (case 2).—Appearance of amebas found in figure 2 when viewed with oil immersion lens. The characteristic "halo" within which the parasite rests, the pyknotic nuclei of the surrounding cells and the vacuolated structure of the amebas are well shown.

concluded that the lesion could not be malignant. A series of stools was again examined and after prolonged search *E. histolytica* was found. The identification of *E. histolytica* was made with cysts stained with iron hematoxylin. (This was the third time we had identified *E. histolytica* in this patient's stool during a period of twelve years.)

Treatment was instituted and carried on for about three weeks, emetine hydrochloride and neoarsphenamine being used. The patient was apparently relieved of all symptoms for a short time, when he again complained of severe pain in the left upper quadrant and of distress after taking food. The character of the pain was distinctly different from that which occurred prior to the operation on the ureter. The possibility

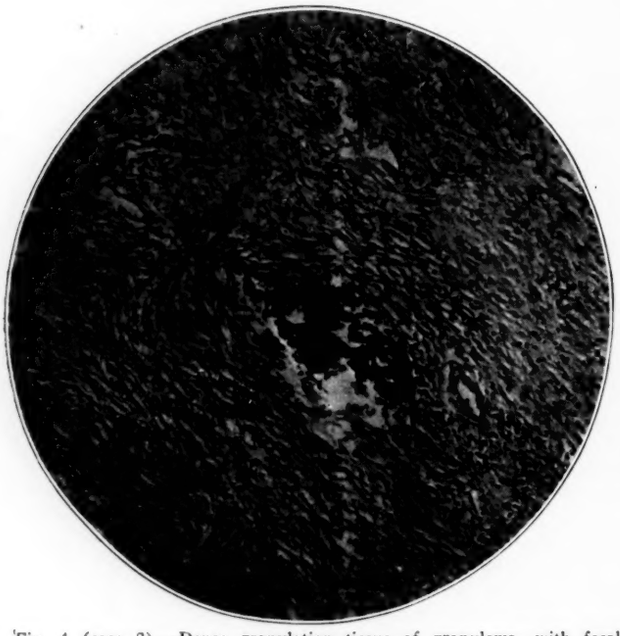


Fig. 4 (case 2).—Dense granulation tissue of granuloma, with focal collection of lymphocytes, under low power.

of the tumor in the splenic flexure being amebic in origin was considered, but as antiamebic treatment had not given any lasting relief, operation was decided on.

May 9, Dr. P. K. Gilman operated on the patient. A firm annular mass 8 cm. long by 5 cm. in diameter was found in the splenic flexure. The lumen would not permit the entrance of more than the little finger. The mass was attached to the stomach, spleen, retroperitoneal wall and lateral abdominal wall by old, firm adhesions. It was removed with some difficulty and continuity of the bowel restored. In the midtransverse colon was an area in which a previous perforation had occurred resulting in distortion of the bowel, as shown in the roentgenogram. Death resulted several days later from peritonitis caused by thrombosis of the left colic vessels and gangrene of the bowel at the anastomosis. At autopsy, no gross or microscopic lesions referable to the amebiasis were found.

When the tumor was cut open there was seen an ulcer 4 cm. in diameter with elevated indurated edges 1 cm. in depth. The surface of the ulcer was covered with a dirty gray slough. The wall and surrounding tissues of the bowel were indurated and hard. The tumor apparently was formed by inflammatory fibrosis and edema.

Microscopic paraffin sections taken through the base of the ulcer showed the base to be formed of a fibrinopurulent exudate containing pyknotic and fragmented nuclei. An infiltration of round cells extended through the remaining portions of the partly destroyed muscularis. Prominent dense collections of lymphocytes grouped in nodules resembling true lymphoid nodules were seen, particularly in the submucosa and subserosa of all the specimens. There was a marked formation of edematous fibrous tissue with scanty infiltration of round cells, plasma cells and eosinophils outside the areas of lymphoid nodular infiltration. Sections taken from the granuloma away from the ulcer showed a similar structure, the muscularis being preserved, and fibrous tissue formation taking place in the submucosa and subserosa. The mucous membrane was normal in appearance while the substantia propria contained numerous eosinophilic leukocytes. Occasional giant cells of the foreign body type were seen in the areas of fibrosis and round cell infiltration.

Amebas could be seen in the necrotic tissue of the base of the ulcer (fig. 1). Each parasite was surrounded by a halo-like clear area in which the ameba rested. With hematoxylin and eosin stains the cytoplasm of the ameba was faintly eosinophilic and vacuolated. The vacuoles varied greatly in size. Many amebas were found that contained red blood cells and nuclear fragments. While the amebas were found in the necrotic tissue of the base of the ulcer in cell-nests containing from several to twenty amebas, single parasites could be found deeper in the tissues of the bowel wall. In the first sections stained, no amebas were found and, because of the definite amebic history and benign character of the growth, prolonged search in further sections enabled one to find and identify the parasites.

The second case occurred in the practice of Dr. N. B. Gould and Dr. Hans Hartman of Modesto, Calif., and it is owing to their courtesy and cooperation that the clinical records are available.

CASE 2.—A. M., aged 37, a Portuguese dairyman, born in the Azores, had lived in New Mexico, Brazil and Argentina. His family history was negative. At the age of 12 years he had trouble with his bowels, with the passage of blood. He had had influenza in 1918, an appendectomy had been performed in 1929 for symptoms of chronic appendicitis, and for the past three years he had complained of having an occasional dull aching in the right side of the abdomen with occasional vomiting in the morning and gas formation. The bowels tended to be loose, with three or four movements daily and occasionally fairly severe diarrhea. He also complained of feeling weak and tired all the time and had a loss of 12 pounds (5.4 Kg.) during the past month.

A large, firm mass was found in the right side of the abdomen. Laboratory examinations showed that the urine was negative. The red blood count was 3,200,000; hemoglobin, 68 per cent; white count, 13,150; eosinophils, 13 per cent. The Wassermann test was negative. Stool examinations were not made. The diagnosis was carcinoma of the cecum.

At operation, May 14, 1930, a moderately large cecum was found containing a tumor about 15 cm. in length by 7.5 cm. in

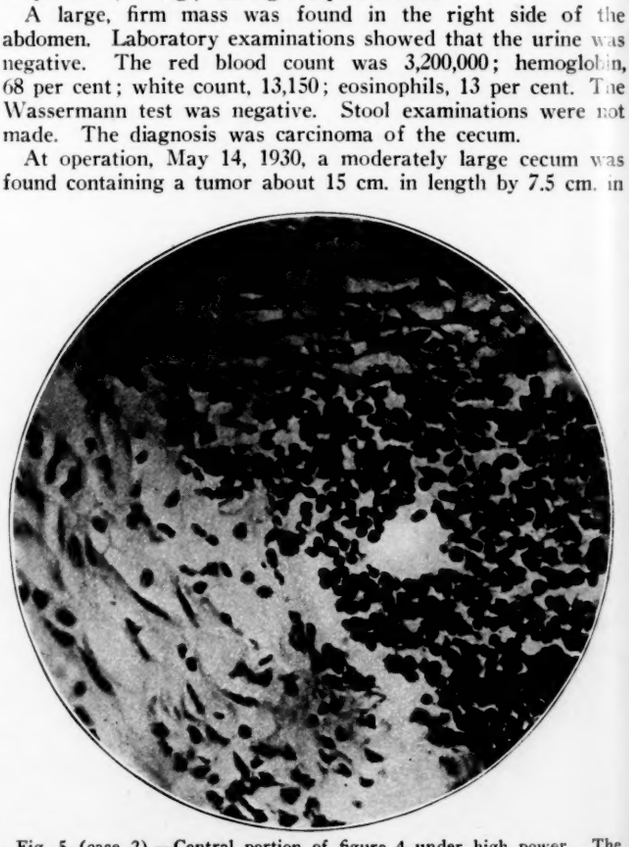


Fig. 5 (case 2).—Central portion of figure 4 under high power. The focal lymphocytic infiltration and the character of the edematous fibrous tissue are clearly shown.

diameter, which was removed. It was hard and firm and contained several necrotic areas. The lumen was contracted to the size of the little finger. Death resulted some time later following a secondary operation to close a temporary ileostomy.

The bowel wall was 4 cm. thick, and on cut surface was composed of homogeneous, dense, white, tough tissue. The induration extended into the mesenteric and pericecal fat.

Microscopic paraffin sections stained with hematoxylin and eosin showed the base of the ulcer to consist of a fibrinopurulent exudate extending partly through the muscularis (fig. 2). The wall of the underlying bowel was necrotic and thickly infiltrated with eosinophilic leukocytes, plasma cells and round cells. The muscularis was almost completely destroyed and infiltrated with eosinophils. The subserosa showed newly formed edematous fibrous tissue and was thickly studded with eosinophils and plasma cells. The great thickness of the wall of the bowel was due mainly to the dense edematous avascular granulation tissue, which showed focal collections of lymphocytes in large, dense groups in addition to the eosinophilic and plasma cell infiltration (fig. 4 and 5). One could see in the necrotic tissue of the base of the ulcer numerous amebas with vacuolated cytoplasm, with a single nucleus and a faint central or slightly eccentric nucleolus. Many of the amebas contained phagocytized red blood cells and nuclear fragments.

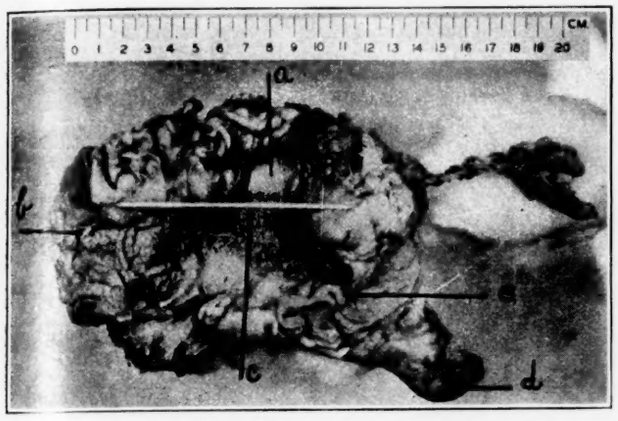


Fig. 6 (case 3).—Resected granuloma: *a*, thickened hard bowel wall; *b*, ascending colon; *c*, base of the solitary ulcer; *d*, appendix; *e*, narrowed ileocecal valve.

CASE 3.—G. S. B., aged 41, an American, had never been out of the United States until the World War, when he was sent to France. He gave no history of previous illness or diarrhea. His present illness began while in France with an attack of diarrhea, which had mildly recurred at intervals. There usually were two or three loose bowel movements daily, causing inconvenience but no invalidism. About two years ago the diarrhea became more marked, with as many as eight or ten liquid movements occurring during a day.

At this time, 1929, the patient was fairly well nourished and appeared healthy. He had no fever; his abdomen was not distended; no tumor masses were felt, and his blood was normal. Examination of the stool showed much mucus and pus but was negative for amebas. Under bismuth treatment the condition improved greatly and there was no further disturbance until May 10, 1930. At this time there was a recurrence of the diarrhea accompanied by considerable pain. The patient still appeared healthy and showed no loss of weight and no anemia. A hard, nodular, freely movable mass was felt in the right side of the abdomen, extending from the groin to near the costal margin. The diagnosis was carcinoma of the colon. At operation by Dr. F. J. Davis, May 15, a tumor involving the cecum was found and removed. An uneventful recovery resulted.

Through the interest of Mr. R. J. Davis, medical student at Stanford University, and his father, Dr. F. J. Davis of Westwood, Calif., we obtained the data and material for the study of this case. A piece of the base of the ulcer was first sent by Dr. Davis to another laboratory. Chronic nonspecific inflammation of the large bowel was reported. After examination of the microscopic sections and identification of amebas as the causative agent, sections made from the tissue still preserved in the first laboratory showed amebas. This further illustrates the difficulty in pathologic diagnosis and the necessity for prolonged careful search for amebas in benign lesions of the large bowel.

The specimen consisted of a tumor mass composed of 6 cm. of the terminal ileum with 14 cm. of the cecum and ascending colon (fig. 6). The anterior surface presented as a hard nodular mass with gray-yellowish infiltrated appendices epiploicae and subperitoneal fat. The surface was covered by a fibrinous exudate, and the blood vessels were engorged. The appendix was 8 cm. long and slightly conical, 1 cm. in diameter at its tip and 2 cm. in diameter at its base. The distal fourth was injected and the peritoneal surface showed a fine fibrinous exudate. The fat of the meso-appendix was thickened and infiltrated. While the mucosa of the terminal ileum appeared normal, the ileocecal valve was narrowed to an inside circumference of 3 cm. The cecum and the first portion of the ascending colon with the surrounding fat and mesentery formed a tumor the size of two fists. The wall of the cecum was 2 cm. thick and the infiltrated indurated serosa and fat further increased the thickness of the wall to 4 cm. The mucosa of the cecum was the site of an ulcer 4 by 5 by 2 cm., the ulcer having an average depth of 1.5 cm. The floor of the ulcer was ragged and necrotic in appearance, the edges of the ulcer sharp cut and overhung with ragged edematous mucosa. Cut sections of the base of the appendix showed the same process that had thickened the wall of the cecum. The lumen of the appendix was obliterated.

Microscopic paraffin sections taken through a portion of intact mucosa showed the goblet cells of the glands to be distended, the glands often dilated and cystic. The substantia propria was densely infiltrated with eosinophilic leukocytes and plasma cells. The submucosa was thickened to three or four times its normal size by edematous hyaline fibrous tissue, which showed an abundant infiltration with eosinophils and plasma cells. The muscularis was edematous and had lost its normal sharp staining qualities; numerous eosinophils separated the muscle bundles. The serosa was greatly increased in thickness by edematous fibrous tissue and showed a marked infiltration with eosinophilic leukocytes, plasma cells and polymorphonuclear leukocytes. Focal abscesses were seen in the subserous tissue. No amebas were found in these sections.

Sections taken from the necrotic ulcer base showed that the muscularis was completely destroyed, and the base was composed of a fibrinopurulent exudate, diphtheritic in type, with an extreme amount of infiltration with eosinophils and plasma cells. The necrotic membrane showed extensive pyknosis and fragmentation of nuclei. In the necrotic material were clear rounded areas, the surrounding cells showing extensive nuclear fragmentation. In these clear areas lay the amebas. They were large rounded or oval cells, approximately 20 or 30 microns in diameter. Their cystoplasm was clear, was faintly eosinophilic and showed numerous vacuoles. Phagocytized nuclear particles and red blood cells could be seen within the amebas. With hematoxylin and eosin stains the nucleus of

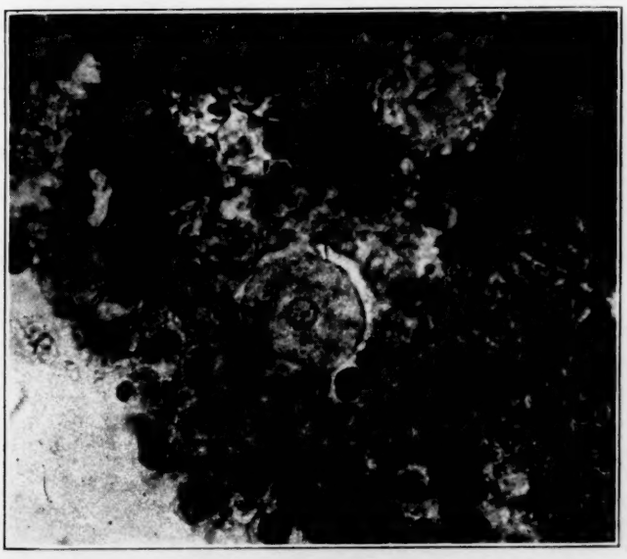


Fig. 7 (case 3).—Section showing peripheral beaded ring of nuclear chromatin and centrosome of ameba. This illustration and figure 8 are reproduced from oil immersion photomicrographs of frozen sections stained with iron-alum hematoxylin and mounted in glycerin.

the amebas stained so darkly that the nuclear detail could not be made out. Paraffin sections stained with iron alum hematoxylin showed the nuclear detail more clearly, but the best results were obtained by frozen sections stained with iron alum hematoxylin, thoroughly decolorized and mounted in glycerin. By this method excellent nuclear detail was obtained (figs. 7 and 8). The vesicular nucleus was often eccentric, from 4.5 to 7 microns in diameter, with a fine outline of the chromatin that showed distinct beading and presented a small centrosome or nucleolus.

Sections of the appendix showed the formation of edematous granulation tissue, but no ulceration of the mucosa and no amebas were found.

AMEBIC GRANULOMA

The three cases here reported show a marked similarity in the pathologic nature of the lesions encountered. They were characterized in each case by an isolated massive ulceration of the large intestine without demonstrable lesions of the remainder of the colon. The ragged necrotic base of the ulcers showed nests of parasites identified as *E. histolytica,* and while small groups or isolated amebas were found deep in the tissue beneath the ulcer base, no parasites were found after

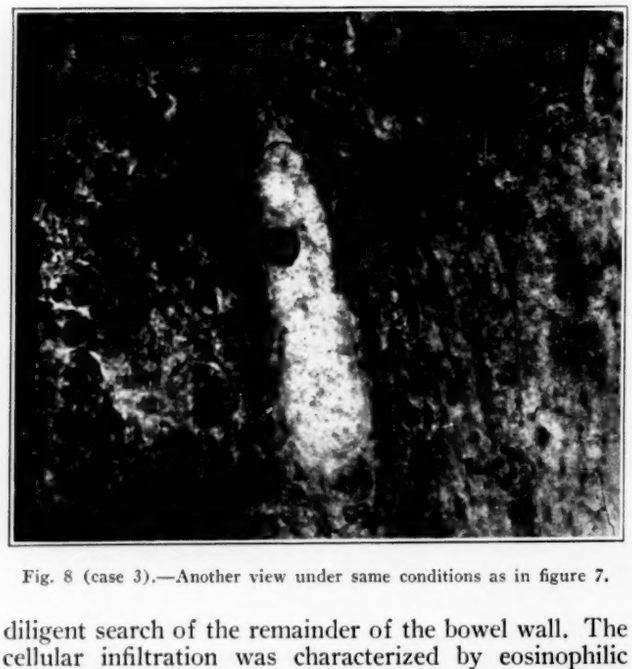


Fig. 8 (case 3).—Another view under same conditions as in figure 7.

diligent search of the remainder of the bowel wall. The cellular infiltration was characterized by eosinophilic leukocytes, plasma cells and focal collections of lymphocytes. Large amounts of fibrous tissue were formed in the submucosa, the area of destroyed muscularis and the subserosa. The surrounding mesocolic fat participated in the same process. The local chronic progressive inflammation resulted in the formation of definite palpable tumor masses, narrowing the large bowel and giving rise to disturbances in motility and function. This is such a definite pathologic picture that it deserves a place as a clinical entity. We feel that the term "amebic granuloma" is justified in referring to the lesions described.

COMMENT

Because of the formation of palpable tumor masses and the interference with colonic function, there is a marked similarity between the amebic granulomas and malignant tumors of the large bowel. In all three of these cases the diagnosis of carcinoma was made.

In the first case, even though the patient was known to have chronic amebiasis, observed over a period of twelve years, and an amebic lesion of the bowel was suspected, previous to and during the operation it was impossible to rule out the malignant nature of the growth.

The sparseness of parasites in the stool examinations of this patient was due undoubtedly to the fact that the amebic infestation was localized in the tumor. In this case such a localization might be accounted for by the fact that past treatment had destroyed amebas elsewhere in the colon. But in case 3 there had never been any antiamebic treatment given and yet, after operation, seven stools taken consecutively and examined by both the direct method in iodine eosin solution and the Yorke and Adams [9] concentration method proved negative for cysts.

That difficulties in pathologic diagnosis exist was well illustrated in cases 1 and 3, in both of which amebas were overlooked by able pathologists.

The necessity for prolonged search and critical scrutiny of suspicious looking cells and the use of special nuclear staining of such cells when found in order to identify them as amebas is apparent.

It is extremely important that sections include the base and edges of the ulcer, as it is here that amebas are found to be most numerous. In all three of our cases, some of the sections taken showed no amebas.

From the appearance of the tumors we have described it must be concluded that they are slow in developing and that they occur in untreated or inadequately treated cases. It might appear on the face of it that case 1 was an exception to this statement, but in reality most of the treatment in that case was given in a desultory manner.

Some of the tumors and masses reported as disappearing after antiamebic treatment doubtless represent early stages of such tumors as we have described. In an advanced stage of development, surgery offers the only relief. It is hardly conceivable that a pathologic process of the nature described in these three cases should yield to antiamebic medical treatment. This impression is borne out in case 1, in which a thorough course of antiamebic therapy, carried out shortly before operation, failed to relieve the symptoms of obstruction. However, as it is impossible to determine beforehand whether or not an amebic growth will respond favorably to treatment, active measures should be thoroughly tried before operation is considered. In this regard it must be remembered that emetine hydrochloride, while a very valuable remedy if properly used, is extremely depressant in overdoses and poorly borne in operative cases.

SUMMARY AND CONCLUSIONS

1. Three cases of amebic granuloma of the large bowel are reported.

2. The pathologic process consists in persistance of an isolated chronic ulcer with progressive erosion of the wall of the bowel. In response to the amebic ulceration and secondary infection, large amounts of edematous fibrous granulation tissue appear. This process affects the entire bowel wall and the neighboring mesocolic fat. As a consequence, tumor masses are formed.

3. These granulomas may be easily mistaken for carcinoma, for they give symptoms, physical signs and radiologic appearances that may be identical with those produced by carcinoma.

4. *E. histolytica* is world wide in its distribution, and infections with it do not necessarily produce diarrhea or dysentery.

Sacramento and Webster streets.

9. Yorke, W., and Adams, A. R. D.: Ann. Trop. Med. **20**: 279 (Aug.) 1926.

DIABETIC LIPEMIA RETINALIS

REPORT OF A CASE *

LILLIAN A. CHASE, M.B. (TOR.)
REGINA, SASK., CANADA

Despite the frequency of reports of severe cases of diabetes mellitus, diabetic lipemia retinalis has been reported only thirty-six times. In February, 1927, I [1] reported the thirty-fifth case; in June, 1927, Ferber and Apperman [2] reported the thirty-sixth case. The following is the thirty-seventh case to be reported. It is of interest because of the completeness of the analyses made of the blood fat and blood cholesterol. For these I am indebted to Dr. W. R. Bloor of the University of Rochester School of Medicine, Rochester, N. Y. The work was done by one of his students, H. D. McEwen, M.A., Robinson Fellow in Biochemistry.

REPORT OF CASE

A. G., a youth, aged 17, from Dubuc, Sask., was admitted to the Regina Grey Nuns' Hospital the evening of Feb. 15, 1928. He was referred to me by Dr. J. V. Connell at noon, February 16. He gave a history of thirst, frequency of urination, weakness, poor appetite and loss of weight since September, 1926, a year and a half before. Glycosuria was first discovered in November, 1927, three months before. He had had some treatment at home, which was not effective. Two weeks before admission he had pain in the upper part of the abdomen; four days before admission he had pain again in the upper part of the abdomen, accompanied by vomiting. The week before admission he had swelling of the legs. His weight at the onset of symptoms was 135 pounds (61.2 Kg.); on admission it was 98 pounds (44.5 Kg.). His height was 6 feet (183 cm.).

The patient had had mumps, measles and pertussis two years before.

His mother and father were alive and well; he had five brothers and one sister alive and well. As far as he knew, none of his relatives had ever had diabetes.

The patient was born in Austria, came to Canada fifteen years ago and lived on a farm. He smokes moderately, drinks one or two bottles of beer daily and helps his father with the work on the farm.

The patient was pale and thin and lay quietly in bed. There was a smell of acetone on his breath. The temperature, which was 97 F. on admission, rose gradually to 100 every afternoon for six days and then gradually became normal. The tongue was dry and pale; the mucous membranes were pale. The pupils were widely dilated and reacted normally to light and in accommodation. One of the teeth showed pus easily expressed at the base; two other teeth were in poor condition. The thyroid was normal. No glands were palpable in the neck, axillae or groins. The tonsils were small; the lungs, normal. The cardiovascular rate was 90 and regular; the systolic blood pressure was 86, diastolic 40; the pulse was soft and compressible. The abdomen was thin, with no areas of tenderness or swelling; the liver was not palpable nor was the spleen. Reflexes, knee jerks and elbow jerks were absent; the abdominal and plantar reflexes were normal. There was no swelling of the extremities; the skin was very dry.

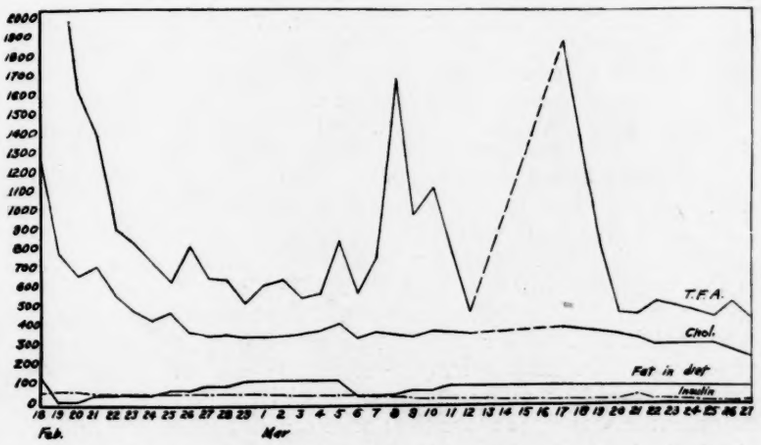
Examination of the urine showed the specific gravity to be 1.020; sugar, 1.1 per cent; acetone, ++; diacetic acid, +; albumin, + Hemoglobin was 70 per cent; white blood cells numbered 7,000; red blood cells, 5,136,000. Fasting blood sugar the following morning was 370 mg. per hundred cubic centimeters. The Wassermann reaction was negative.

The patient was put on a diet of 60 Gm. of protein, 140 Gm. of fat, 45 Gm. of carbohydrate, which diet gives a fatty-acid-dextrose ratio of 1.6:1. He was given 60 units of insulin the first day and 70 units the second day. After he had had four meals of this diet the technician, Miss C. J. Polasek, asked me why his blood serum had that white appearance. She had noticed it in the first samples after he came in but had not mentioned it. As soon as I saw the blood I realized that this case was similar to the one I [1] had reported the year before. Dr. Palmer, who had examined the eyes in the former case, examined this patient and made the following observations:

February 18, vision was normal, and the pupils reacted normally to light and in accommodation. The retinal reflex was almost gone; it was a very pale ivory; the retinal arteries were of a deeper hue; they could not be distinguished from the veins; the vessels gave the appearance of being overfull. Total lipids in the blood plasma was 10.57 per cent.

February 19, the diet was changed to 70 Gm. of protein, 25 Gm. of fat and 60 Gm. of carbohydrate. This gave a fatty-acid-dextrose ratio of 0.5:1. Sixty units of insulin was given. The retina was not so pale. Total lipids in the whole blood were 4.26 per cent.

February 20, the fundus reflex had become normal, but the retinal vessels still stood out in their ivory hue. Total lipids in the whole blood were 2.86 per cent.



Clinical course in case reported here: dose of insulin in units; fat in the diet in grams; cholesterol in milligrams; total fatty acids in milligrams (first analysis of total fatty acids too high to chart).

February 22, the light reflex of the vessels was about the size of the vessels; the vessels themselves had lost their overfull appearance. Total lipids in the whole blood were 1.42 per cent.

February 25, the fundus and vessels were normal as to light reflex. There was nothing to indicate that any abnormal condition had ever been found. Total lipids in the whole blood were 1.13 per cent.

As the acetone and albumin in the urine and the visible fat in the blood gradually disappeared, the diet was increased, until the diet on February 29 was 70 Gm. of protein, 125 Gm. of fat, and 60 Gm. of carbohydrate. This gave a fatty-acid-dextrose ratio of 1.3:1.

The increases of the fat in the diet did not interfere with the gradual diminution of blood lipids. Increases in the blood lipids on March 2, 5 and 8 cannot be explained. March 8, he got only 50 Gm. of fat but he showed a higher blood lipid than on any day since February 20. Apparently the amount of fat in the diet was not the factor in raising the blood lipids. March 17, he again showed an increase in blood lipids, but this can be explained by the fact that he left the hospital, March 14, and probably made a mistake in his diet. March 18, he ate some sweet jelly by mistake; it took four days to clear up the resulting glycosuria. March 24, he had three teeth extracted; culture from the roots of these yielded streptococci of a nonhemolytic type. March 28, his blood lipids were only slightly above normal. He was practically sugar free on a diet of 80 Gm. of protein, 100 Gm. of fat, 66 Gm. of carbohydrate and 25 units

* A grant toward the expenses of the chemical work was given by the Robinson Diabetic Fund of the University of Rochester School of Medicine.

* Since this article was prepared for publication, a case of lipemia retinalis has been reported by W. R. Parker and A. M. Culler (Am. J. Ophth. **13**: 573 [July] 1927); thus this is the thirty-eighth case.

1. Chase, Lillian A.: Diabetic Lipemia Retinalis, Canad. M. A. J. **17**: 197 (Feb.) 1927.

2. Ferber, Julius; and Apperman, I.: Lipemia Retinalis Diabetica, M. J. & Rec. **125**: 815 (June 15) 1927.

of insulin divided in four doses daily, so he went back to the country. He gained 16 pounds (7.3 Kg.) during his two months in the hospital and two weeks in the city; his blood pressure rose from 86/40 to 106/74.

He sent reports faithfully, remained sugar free, and continued to gain weight until July, when he broke his diet and showed 4 per cent sugar in the urine. He stayed only two days in the city but went home promising to remain sugar free, which he has done. October 23, he took a fasting sample of his own blood in a vacuum tube containing potassium oxalate as an anticoagulant. On this sample H. D. McEwen gave the following analysis: total lipids, 0.601 per cent; total fatty acids, 424 mg. per hundred cubic centimeters; cholesterol, 170 mg. per hundred cubic centimeters. The cholesterol was lower than any previous estimation. His present weight, February, 1929, a year after he was first seen, is 150 pounds (68 Kg.), which is just 8 pounds (3.6 Kg.) less than the standard weight for his height and age. He is sugar free on 20 units of insulin daily divided in four doses.

COMMENT

In this case lipemia retinalis disappeared when the blood lipids were between 1.42 and 1.13 per cent in the whole blood. This is a much lower figure than that in the case of Gray and Root,[3] who "limit the threshold to between 3 per cent and 6 per cent of the plasma lipoids." Wagener[4] says that with 4 or 5 per cent fat content of the blood the diagnosis of lipemia becomes possible with the ophthalmoscope, while with 8 per cent the changes are very outspoken. One cannot become dogmatic about this threshold figure until in a large number of cases daily blood lipids are compared with daily examinations of the retina.

McCann's case[5] showed lipemia retinalis when the blood fat was 9.5 per cent, but paradoxically the lipemia retinalis disappeared when the blood fat was 10.8 per cent. He suggests that the change in the appearance of the vessels may be due to the state or aggregation of fats rather than to the total lipid content or to a change in the vessel wall, or due to a change in the content in the perivascular lymph spaces. A tissue was examined in looking for this, but no proof was found of change. In his clinic, whenever the laboratory reported turbid or milky plasma a special ophthalmic examination was done more than once on each patient. Lipemia sufficiently milky to be grossly visible was fairly common in diabetic patients, yet lipemia retinalis was detected only twice in 150 such patients.

The cause of high blood fat remains a puzzle; why one diabetic patient showing much glycosuria, acetone and hyperglycemia shows a high blood fat, and another with similar abnormalities does not, has never been adequately explained. Lipemia patients are thin, but most patients with severe diabetes are. It is a well known fact that high blood fat is shown in starvation. This boy, 6 feet tall and weighing 98 pounds, looked like a famine child. Bloor and his co-workers[6] say that the lipemia is not due to the fat in the food but evidently to faulty or sluggish removal mechanism resulting from a change in the permeability of the tissues to fat. But the question may be raised: Of which particular factor among many abnormal factors is this changed permeability the result?

Gray and Root,[3] also Muskat,[7] give a poor prognosis in lipemia; the former two years, the latter five months. Boyd[8] states that her results do not indicate that initial blood fats are such reliable guides in making a prognosis as other workers have concluded. Insulin has changed all prognoses in diabetes for the better. It has also changed this one. My first patient with lipemia,[1] Mr. W. C., is alive, taking less insulin and more carbohydrate all the time and working every day in a garage. It is four years since he had the excessive lipemia.

SUMMARY

The thirty-seventh case of diabetic lipemia retinalis is reported.

The lipemia retinalis cleared up in seven days on insulin.

Thirty-seven analyses of the blood for total lipids, total fatty acids and cholesterol were made.

The blood lipids became normal in thirty-six days; the total lipids and total fatty acids dropped rapidly; the cholesterol dropped slowly and showed fewer daily fluctuations.

The patient is now, one year later, 52 pounds (23.6 Kg.) heavier than on admission, and is sugar free on 20 units of insulin daily.

302 Westman Chambers.

3. Gray, Horace; and Root, H. F.: Lipemia Retinalis, J. A. M. A. **80:** 995 (April 7) 1923.
4. Wagener, H. P.: Lipemia Retinalis, Am. J. Ophth. **5:** 521 (July) 1922.
5. McCann, W. S.: Lipemia Retinalis, Bull. Johns Hopkins Hosp. **34:** 302 (Sept.) 1923.
6. Bloor, W. R.; Gillette, Ethelyn M., and James, Mildred S.: Lipids in Experimental Diabetes, J. Biol. Chem. **75:** 61 (Oct.) 1927.
7. Muskat, I. I.: Lipemia Retinalis, Am. J. Ophth. **7:** 288 (April) 1924.
8. Boyd, Gladys L.: Blood Fat in Diabetic Children, Am. J. Dis. Child. **34:** 298 (Aug.) 1928.

RESULTS OF SYMPATHETIC GANGLIONECTOMY AND RAMISECTOMY FOR CHRONIC ARTHRITIS

THE PERSONAL EXPERIENCES OF A PHYSICIAN

JAMES R. MOORE, M.D.
JEROME, ARIZ.

It has been suggested to me that the recording of some personal experiences in the onset, progress and treatment of arthritis might be of interest to the profession, especially the reaction which I, as a physician, have experienced in the newer surgical methods of treatment; e. g., a quadrilateral sympathetic ganglionectomy and ramisectomy.

The onset of arthritis, which was insidious, occurred during the summer of 1926, in the midst of perfect health, while I was residing in upper Egypt, a region commonly considered especially favorable as a place of residence for persons with this disease. My previous residence had been for many years in Arizona, which also justly enjoys the reputation of having a most salubrious climate.

The trouble began in the terminal phalanx of the right index finger and at first resembled the well known "baseball finger," but as there had been no antecedent injury to account for such a condition and as other fingers subsequently became involved, it was decided that the condition must be arthritis.

Warning had been given several years previously of the possible development of arthritis when several patches of psoriasis appeared on the hands and legs, but in spite of this evidence it was not until the spring of 1927 that the condition was actually recognized as arthritis—an occurrence which emphasizes the futility of self diagnosis.

In March, 1927, several teeth which were radiographically suspicious were extracted and a tonsillectomy was performed as the opening steps in a campaign for the elimination of possible foci of infection.

Little, if any, benefit was noted from these procedures and by the summer of 1927 the toes of the right foot had become painful and swollen, as well as the index and middle fingers of the right hand and the thumb on each hand.

A vaccine was prepared from cultures recovered from the extracted teeth and used over a period of several weeks without any appreciable result.

In the fall of 1927, on the advice of attending physicians, I returned to the States. For three months a thorough search was made for possible foci of infection while an intensive course of physical therapy in the form of hot paraffin baths, massage and generalized exposure to ultraviolet radiation was being carried on. There was apparently some benefit derived from these procedures but it was only temporary, for by the spring of 1928 both feet and knees were involved to such an extent that walking had become quite painful and difficult, necessitating the use of a cane.

In May, 1928, a renewed search for foci of infection was made. Cultures of the stools were taken and skin tests made from the resulting cultures. A mixed vaccine was prepared from these and used for a period of approximately eight months. The only organism in this vaccine producing any degree of skin reaction was *Bacillus coli*. Immediately preceding the use of the vaccine, four intravenous injections of amiodoxyl benzoate were given at weekly intervals. A severe general reaction occurred with all but the first, which was a minimal dose. Since little improvement was noted, the treatment was discontinued after the fourth injection. During this period a series of from ten to twelve colonic irrigations was made. A very gradual but fairly definite improvement was noted during the winter of 1928-1929 while the autogenous colon vaccine was being used. It became possible to discontinue the use of a cane and to continue the rather light duties of a college physician. No other treatment aside from general hygienic measures and a three weeks' series of hot baths at an Indiana spring was used during this period.

In June, 1929, on the advice of attending physicians, I left Ohio and returned to my former home and position in Arizona. It was possible to carry on rather heavy duties in an industrial hospital until November, 1929, when both feet and hands became so painful that my general health, which had always been good, became impaired, as evidenced by sleepless nights, increased irritability and mental depression.

In January, 1930, a thorough search was made in the Mayo Clinic for possible foci of infection with practically negative results. At that time the toes of both feet were painful and swollen with marked limitation of motion. The metatarsal areas were painful as were also the heels and ankles, although there was little limitation of motion in the latter. The feet were cold, clammy, slightly cyanotic and bathed in cold perspiration. Roentgenograms showed slight bony changes in the phalanges. Walking and particularly standing were so painful that both were indulged in as little as possible. At the tendinous insertions of the extensor muscles on the patellae, both knees were quite tender and painful. At that stage I might almost have been classed as "a wheel chair case."

After a most thorough study of the case, including local temperature studies and a determination of the vascular index, a bilateral lumbar sympathetic ganglionectomy and ramisectomy was advised by Drs. L. G. Rowntree and W. M. Craig, who gave the following reasons: "The patient, who is 40 years of age, has a gradually advancing arthritis showing a predominence of periarticular changes and evidence of local vascular disturbance but with beginning bony changes, which has resisted all the usual modes of treatment."

This operation was performed, Jan. 25, 1930, by Dr. Craig. Recovery was rapid and convalescence uneventful. Immediately on coming out from under the anesthetic, I noted the following conditions: The lower extremeties were warm and dry. The pain had practically disappeared and it was possible to move the feet, toes and knees without discomfort. Objectively it was noted that the swelling had largely disappeared and that the skin was of a more natural color and normal appearance. At the end of two weeks when allowed out of bed, I found that weight bearing caused little discomfort and that it was possible to walk for a distance of two or three blocks in comparative comfort.

Five weeks after the operation I was able to resume my practice and duties. For the following three months there were times when my feet became quite painful but at no time were they as bad as they had been preceding the operation. Four months after the operation a very gradual but definite improvement was noted which has continued until the present time (March, 1931). It is now possible to walk a distance of half a mile without great discomfort although there is a tendency for the pain to recur following unusual walking or standing.

The hands, which had become markedly improved for the first ten days following the lumbar sympathectomy, gradually became more swollen and painful until at the time of the second admission to the Mayo Clinic in July, 1930, every phalangeal joint and both wrists were involved. My hands were cold, clammy and cyanotic with spindle-shaped joints in which mobility was greatly reduced. Atrophy of the interosseous spaces was quite evident.

Disability was so great that I requested that an operation for the release of the sympathetic control of the upper extremities be done. After additional studies, a bilateral, cervicothoracic sympathetic ganglionectomy and ramisectomy was done, July 26. Again recovery was prompt and, aside from a few rather annoying pains in the arms for a week or two, convalescence was uneventful. The same relief from pain, as well as the same objective changes, was noted in the hands as was experienced in the feet after the former operation. The swelling was greatly reduced, although mobility of the affected joints has not been recovered as yet, because doubtless of certain bony changes which had already taken place prior to operation.

No effects, either objective or subjective, have been noted as a result of the two operations other than those already mentioned. The absence of any moisture in the hands is rather annoying as it interferes with the grasping power of the hand. Rubber finger tips for handling small light objects and gloves for larger articles have been found to be a great aid.

The freedom from constant pain, the radical change in mental attitude following such definite improvement, and the return to active service have all been reflected in improved general health and disposition. In place of long years of useless, hopeless inactivity, the future now holds promise of better things. Such a result has more than justified the risk and discomfort necessarily attendant on two such major operations.

SUMMARY

1. A case of arthritis in a man, aged 36, who had resided for many years previously in a warm, dry climate, developed without antecedent illness.

2. The case became progressively worse in spite of the elimination of possible foci of infection combined with the usual and recognized methods of treatment, pursued over a period of three years.

3. Marked improvement both subjectively and objectively and at least an apparent arrest of the progress of the disease were observed in both the upper and lower extremities following a quadrilateral sympathetic ganglionectomy and ramisectomy. Improvement in general health and mental attitude followed closely on relief of the local joint condition.

CONCLUSION

I would not hesitate to recommend to any one suffering from arthritis the radical surgical procedures referred to in this article, provided a fair trial had been given other recognized modes of treatment and the signs in the case were such as would indicate in the light of past experience that a favorable result might reasonably be expected.

Clinical Notes, Suggestions, and New Instruments

REMOVAL OF TWO SEWING NEEDLES EMBEDDED IN THE FALCIFORM LIGAMENT AND RIGHT LOBE OF THE LIVER FOR FIFTEEN YEARS *

GEORGE DE TARNOWSKY, M.D., CHICAGO

M. K., a man, aged 52, was referred to me, March 16, 1931, with a diagnosis of gastric or duodenal ulcer of fifteen years' duration. The patient complained of alternating dull and sharp pains in the epigastrium, coming on about one hour after eating and relieved by the taking of sodium bicarbonate. Vomiting had been frequent with no relation to the type of food eaten. He stated that he used alcohol in moderation. The general impression was that of a morose individual, reluctant to give any information regarding his past life, emaciated and having a markedly anxious facies. Routine laboratory and roentgen examinations were ordered. A few hours after the patient was admitted to the Lutheran Memorial Hospital his pastor informed me that his parishioner had confessed to him that, fifteen years ago, he had pushed two sewing needles into his epigastrium in an attempt to commit suicide. A series of roentgenograms were made, negative as regards the stomach or duodenum, and the following opinion submitted to me as a guide: "In the epigastrium there are two linear metallic shadows, apparently needles, which lie in a somewhat wide V arrangement. One of the needles is in two almost equal parts. Fluoroscopically, the needles move with only slight palpation and therefore appear to lie within the anterior abdominal wall, though a lateral study shows one of the needles to be lying almost at right angles to the skin. The maximum depth of this needle is 6.5 cm.; of the superficial one, 1 cm. from the skin surface."

As both needles lay to the right of the median line, a crescentic incision was made through the skin from the ensiform appendix outward and downward beyond the outer border of the right rectus. The muscle fibers were closely palpated and teased apart with negative results. On the posterior sheath of the rectus, two old linear scars were discovered and the peritoneal cavity was opened between them. The stomach and duodenum were found to be normal. Quite accidentally, my associate Dr. P. J. Sarma felt one needle buried in the falciform ligament. It was removed piecemeal, almost completely eroded. The second needle was luckily oriented through discovering a minute dark spot on the under surface of the right lobe of the liver; the needle's eye just protruded through the dome of the lobe. Adhesions were so firm that a cataract knife was used to dissect the two segments before removing them. Hepatic bleeding was efficiently checked by pushing a plug of fat taken from the falciform ligament into the wounded liver with a lightly tied 00 catgut suture to prevent its slipping out. The patient made an uneventful recovery and was completely relieved of his former symptoms.

2719 Pine Grove Avenue.

* Read before the Chicago Surgical Society, April 3, 1931.

* From the Department of Surgery, University of Illinois College of Medicine.

LEUKEMOID BLOOD PICTURE IN GRANULOMA OF SCALP AND IN SUBACUTE APPENDICITIS *

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Assistant Bacteriologist, Lenox Hill Hospital

Since the syndrome of agranulocytic angina was first described by Schultz [1] in 1922, attention has been called to a variety of conditions other than angina associated with an agranulocytic blood picture. In some cases there is a depression not only of the granular elements of the bone marrow but of lymphatic stimulation as well. Krumbhaar [2] termed this blood picture "leukemoid" and reported a series of such cases which were grouped into the following classes: (1) measles and pertussis, (2) acute infections with lymphocytosis, (3) acute infections with hemorrhage, (4) terminal septicemia, (5) bone marrow intoxication, (6) agranulocytosis, and (7) myeloma. Blumer [3] also reported a series of cases—mostly definite infections—in which there was an agranulocytic blood picture.

The two cases presented are noteworthy since in the first—the granuloma of the scalp—no organisms could be demonstrated to account for the severe septic picture, while the second—the appendicitis—was in no way different from the usual appendicitis associated with an increase in the granular leukocytes.

CASE 1.—*Granuloma of scalp.* A white man, aged 22, single, whose past history was essentially negative, had on two occasions three and two months before admission accidentally struck his head against a radiator while leaning back in a low chair. Five weeks before admission he first noticed a small "wen" over the right occiput. Two weeks later he consulted his physician because of pain in this region, and the swelling was incised. The condition did not improve and the right posterior cervical glands began to swell. He became quite ill and his temperature ranged from 99 in the morning to 103 F. at night for one week before admission to the hospital. On the day of admission, September 15, he was quite toxic and acutely ill, with a temperature of 102 F.; pulse, 110; respirations, 28.

Physical examination, including a careful survey of the throat, was negative except for the local condition. This presented a soft, boggy swelling about 5 cm. in diameter in the right posterior occipital region of the scalp. It was reddened and very tender but gave no sense of fluctuation. The corresponding right posterior occipital glands were markedly enlarged and tender. There was a small incised wound in the center of the swelling.

A diagnosis of abscess of the scalp was made and several small incisions were made into the swelling. No actual pus was found. In the center of the swelling a small soft necrotic knoblike protrusion was seen and excised. The wound was packed. Cultures from the wound at operation were sterile and no organisms were seen in direct smears. The small piece of tissue excised was composed of loose granulation tissue intensely infiltrated with wandering cells of every description. Many multinucleated giant cells were also present. The pathologic diagnosis was granuloma, etiology unknown. The blood Wassermann test was negative.

* From the Achelis Laboratory and the services of Dr. Herman Fischer and Dr. Carl Eggers, Lenox Hill Hospital.

1. Schultz, Werner: Deutsche med. Wchnschr. **48**: 1495 (Nov. 3) 1922.

2. Krumbhaar, E. B.: Leukemoid Blood Pictures in Various Clinical Conditions, Am. J. M. Sc. **172**: 519 (Oct.) 1926.

3. Blumer, George: The Agranulocytic Blood Picture in Conditions Other than Angina, Am. J. M. Sc. **179**: 11 (Jan.) 1930.

The patient continued to grow steadily worse, very toxic and delirious, the temperature ranging between 101 in the morning and 104 at night. A blood count, September 20, five days after admission, showed hemoglobin, 70 per cent; red blood cells, 4,200,000; white blood cells, 4,600; neutrophils, 72 per cent; lymphocytes, 20 per cent, and monocytes, 8 per cent. The urine showed nothing significant; a roentgenogram of the chest was negative, and the blood Widal showed no agglutination. The blood count, September 22, showed white blood cells, 4,000; neutrophils, 67 per cent; lymphocytes, 30 per cent, and monocytes, 3 per cent. The patient was going downhill and on September 25, ten days after admission, a blood transfusion of 500 cc. was given, followed by a chill and a rise of temperature to 105 F. A blood culture, September 29, was sterile. The blood count, October 2, was: hemoglobin, 86 per cent; red blood cells, 4,100,000; white blood cells, 600; neutrophils, 30 per cent; band forms, 13 per cent; lymphocytes, 40 per cent; monocytes, 16 per cent, and eosinophils, 1 per cent. The temperature now gradually began to fall and the patient's general condition seemed to improve. The blood count, October 8, was: hemoglobin, 100 per cent; red blood cells, 4,500,000; white blood cells, 1,700; neutrophils, 45 per cent; band forms, 7 per cent; lymphocytes, 29 per cent; monocytes, 17 per cent, and eosinophils, 1 per cent. He now continued to improve; the scalp wound healed and he was sent home cured. The blood count, January 24, three months later, was: hemoglobin, 90 per cent; red blood cells, 4,200,000; white blood cells, 5,600; neutrophils, 54 per cent; band forms, 2 per cent; lymphocytes, 33 per cent; monocytes, 8 per cent, and eosinophils, 1 per cent, and he was in perfect health.

CASE 2.—*Subacute appendicitis.* A white woman, aged 22, single, whose past history was negative, began to complain of nausea four days before admission. Two days later she began to have a dull pain in the right lower quadrant of the abdomen. At no time was it severe. The pain did not cause the nausea to increase and there was no vomiting. The pain did not radiate. The bowels were regular and there was no urinary or menstrual disturbance.

An examination of the throat was negative: the tonsils were out; the teeth were well cared for, and there was no glandular enlargement. The heart and lungs were normal; the abdomen was not distended; there was fulness in the cecum and slight tenderness and rigidity over the entire right lower quadrant. The temperature was 100.6 F. The blood count on admission to the hospital, September 26, was: white blood cells, 14,600; neutrophils, 8 per cent; lymphocytes, 83 per cent; lymphoblasts, 3 per cent; monocytes, 5 per cent, and eosinophils, 1 per cent. The urine was normal.

In spite of the peculiar blood count, the diagnosis of appendicitis seemed positive and an appendectomy was done. At operation the peritoneum looked wet, but there was no pus and no odor. A retrocecal appendix was found acutely angulated, with the distal two thirds distended, discolored and apparently the cause of the trouble. There was no enlargement of the mesenteric lymph nodes. Subsequent histologic examination of the appendix showed the picture of a typical subacute and chronic inflammation. The blood count, September 27, was: white blood cells, 15,000; neutrophils, 35 per cent; lymphocytes, 55 per cent; lymphoblasts, 4 per cent, and monocytes, 6 per cent. The temperature rose to 103 F. two days after operation and then came down to normal, and the patient made an uneventful recovery, with the blood count gradually returning to normal.

COMMENT

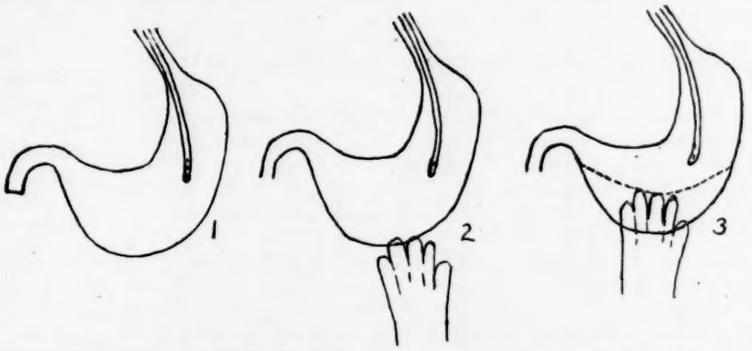
The case of granuloma of the scalp is interesting in that it was impossible to demonstrate any organisms in what seemed to be a definite infection. This brings up the idea of some virus as the etiologic agent. This is quite a prevalent view in connection with agranulocytic angina, in which the Vincent and the pyogenic organisms found in the throat lesions are frequently considered as secondary invaders. The case of appendicitis might be viewed in a similar light. On the other hand, the granulocytopenia may be associated with a constitutionally defective bone marrow reacting to the usual stimuli in an abnormal way.

41 West Eighty-Second Street.

A SIMPLIFIED PROCEDURE FOR THE INTRODUCTION OF A TUBE INTO THE DUODENUM *

MORTON MORGENSTERN, M.D., CLEVELAND

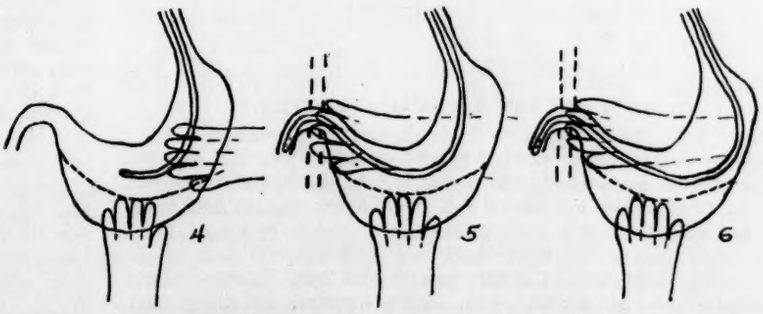
During duodenal drainage for diagnostic purposes, for treatment, or in the course of experimental procedure, the patient is usually required to rest on the right side for an hour or more waiting for the tube to float into the duodenum. The entire drainage continues from two to three hours, frequently leaving the patient rather exhausted.



Figs. 1, 2 and 3.—Raising of greater curvature by pressure of hand.

Although experience has taught that the peristaltic waves of the stomach will carry the tube into the duodenum, a spastic pylorus may be encountered, the tube may curl up and the peristaltic waves not be sufficiently strong, or other things may happen that may markedly delay the procedure or prevent the entrance of the tube. The method presented here has reduced materially the time of this procedure.

The study of forty cases has proved that the tube may be successfully inserted into the duodenum in approximately two to ten minutes. This was verified by actually seeing the tube in the first portion of the duodenum under the fluoroscope. The bile was obtained in from two to fifteen minutes after the tube was in position.



Figs. 4, 5 and 6.—Guidance of tube toward pyloric canal.

The Levin duodenal tube and the Rehfuss tube were used. Results obtained with the Rehfuss tube were unsatisfactory as the result of the olive adhering to the walls of the stomach and interfering with the directing of the tube. This tube is too pliable for work of this kind. The Levin duodenal tube, being composed of a firmer material and containing a catheter tip, was more adaptable.

PROCEDURE

The patient is taken into the fluoroscopic room and while seated has the tube passed into the stomach. The patient is then placed behind the fluoroscope and asked to relax. As soon as the tube is in the middle region of the stomach, the operator's left hand is pressed against the abdomen in the region

* From the Gastro-Intestinal Clinic, Johns Hopkins Hospital, Baltimore.

of the greater curvature, in an upward position, to raise the greater curvature to the level of the pyloric sphincter, as shown in figures 1, 2 and 3.

The tube is slowly swallowed by the patient while it is being guided toward the pyloric canal by the operator's right hand, as illustrated in figures 4, 5 and 6.

The tube is gradually massaged into the first portion of the duodenum and introduced approximately 1 or 2 inches past the spinal column. It is held in this position while the patient swallows more of the tube, permitting a loop to form as shown in figure 6. At this time the patient's left hand is substituted for the operator's left hand to keep the greater curvature on a level with the pylorus. The patient is laid on the right side and aspiration started. The loop that is formed will aid in keeping the tube in place and permit it to pass farther into the duodenum.

Time Required for Fluoroscopy and Flowing of Bile

Case	Time in Minutes for Insertion of Tube	Tube Used	Flow of Bile First Noted
1	3	Levin Duodenal Tube	7
2	2	Levin Duodenal Tube	5
3	8	Levin Duodenal Tube	11
4	7	Levin Duodenal Tube	8½
5	15	Rehfuss	22*
6	3	Levin Duodenal Tube	17
7	5	Levin Duodenal Tube	11
8	7	Levin Duodenal Tube	18
9	12	Rehfuss	25*
10	..	Levin Duodenal Tube	..†
11	7	Levin Duodenal Tube	9
12	6	Levin Duodenal Tube	17½
13	9	Levin Duodenal Tube	15
14	2	Levin Duodenal Tube	7½
15	3	Levin Duodenal Tube	10½
16	5	Levin Duodenal Tube	12*
17	6½	Levin Duodenal Tube	13*
18	..	Rehfuss	..†
19	9	Levin Duodenal Tube	12
20	5	Levin Duodenal Tube	7
21	4	Levin Duodenal Type	20
22	1½	Levin Duodenal Tube	4
23	10	Levin Duodenal Tube	18*
24	..	Levin Duodenal Tube	..†
25	10	Levin Duodenal Tube	18
26	3	Levin Duodenal Tube	6*
27	7	Levin Duodenal Tube	10*
28	2	Levin Duodenal Tube	14
29	2	Levin Duodenal Tube	13
30	3	Levin Duodenal Tube	7½
31	5	Levin Duodenal Tube	19
32	7	Levin Duodenal Tube	8½
33	4	Levin Duodenal Tube	13
34	6½	Levin Duodenal Tube	14*
35	5	Levin Duodenal Tube	12
36	2½	Levin Duodenal Tube	15
37	2	Levin Duodenal Tube	13
38	3	Levin Duodenal Tube	6½
39	7	Levin Duodenal Tube	9½
40	4½	Levin Duodenal Tube	16

* Bile obtained after administration of atropine or tincture of belladonna.

† Unsuccessful after administration of antispasmodics.

SPECIAL DIFFICULTIES

Such difficulties as spastic pylorus and ptosed stomach have been encountered along with other obstacles, but these have been surmounted in the following ways:

Spastic Pylorus.—If the tube has not been inserted in the duodenum after several attempts, the patient is given antispasmodics such as tincture of belladonna or atropine sulphate and told to return in three days. When the patient returns, the obstacles previously encountered usually exist no longer.

Ptosed Stomach.—If the tube reaches below the crest of the ileum there is probably a gastroptosis. The patient is laid on a bed and the foot of the bed is elevated two feet; in this manner the stomach is thrown high up into the abdomen, the greater curvature pressing against the tube, keeping it in place. It is advisable for the patient to continue to exert pressure until the foot of the bed is elevated. This routine was adopted because of the repeated dropping of the tube from the duodenum after it was placed in position.

In a few intractable cases of spastic pylorus the patient should lie on a horizontal fluoroscope and inhale amyl nitrite. This tends to make the manipulation easier as it relieves the spasm. The horizontal fluoroscope is of benefit in the placing of the tube in cases of ptosis.

The entire procedure is very simple. The technician, Mr. J. E. Steigerwald, was trained to perform this procedure, and I am indebted to him for securing some of the data.

COMMENT

The procedure is advantageous to physician, technician and patient. By watching and directing the passage of the tube, one can prevent its curling and assure oneself of its exact position in the duodenum. This eliminates the necessity of repeated fluoroscopic examination. Success in thirty-seven out of forty cases has shown the advisability of adopting this routine.

In the performance of this procedure, from one and a half to two hours is saved for complete biliary drainage, as some drainages have been completed in from twenty-five to thirty minutes. The time saved and the simplicity of this routine lessen the stress and strain brought to bear on the patient in the pursual of the old procedure.

NOTE.—Since this article was first sent to the publisher, we have completed approximately fifty duodenal drainages in which the tube was passed into the duodenum in about one and one-half to three minutes. The bile was obtained immediately after the tube was in place and the drainages were completed in from twenty-five to thirty-five minutes. No antispasmodics were used in this series of cases.

UNDULANT FEVER IN A CHILD UNDER SEVEN MONTHS OF AGE *

OLIVER W. HILL, M.D., AND RALPH H. MONGER, M.D.
KNOXVILLE, TENN.

This case is being reported because of the age (7 months), history and rapid recovery of the patient.

M. N., a girl, was admitted to the Home for Friendless Babies, Aug. 17, 1930. Her birth date was Feb. 17, 1930. She was a well nourished, breast fed baby, weighing 17 pounds 3 ounces (7.8 Kg.).

The family history was negative except that the mother had had a number of abortions. The Wassermann reaction on both the father and the mother was negative.

The mother was also admitted, continuing to nurse the infant. The baby had a steady gain in weight until October 1, at which time she weighed 20 pounds 2 ounces (9 Kg.); she then began losing weight. This loss, however, was thought to be due to an inadequate milk supply, as the child was apparently normal. She was given supplementary feedings of cow's milk (boiled three minutes), diluted 1 to 4, with the use of a maltose dextrin preparation as a carbohydrate. Fifteen drops of cod liver oil with viosterol 5 D three times a day was prescribed.

October 15, her weight had fallen to 18 pounds 2 ounces (8.2 Kg.). She was stupid to the point of lethargy and occasionally restless for short periods. At this time she suddenly appeared very ill. Her skin was cold and moist; at intervals there was severe sweating; the pulse was soft, 140; there were slightly red fauces and enlarged tonsils. A throat culture showed staphylococci. Her temperature was 99.6 F. A blood count showed: total red blood cells, 4,144,000; total white blood cells, 16,650; hemoglobin, 84 per cent; differential: polymorphonuclears, 65 per cent, and lymphocytes, 35 per cent.

The Wassermann and Widal tests were negative and a blood culture was negative. The spinal fluid was lowered in pressure, 100 mm. water manometer, and clear, with a normal cell count. In spite of careful nursing and supportive care, the child lost weight steadily. November 5, her weight was 15 pounds (6.8 Kg.). Some one suggested that she "looked like" a patient with undulant fever. On this clue, we sent a specimen of her blood to the laboratory. Macroscopically, 4 plus agglutinations occurred in dilutions of 1:20, 1:40, 1:80, 1:160, 1:320 and 1:640.

Knowing of no specific medication, we continued our supportive measures. To combat the dehydration, we gave her 150 cc. of physiologic solution of sodium chloride intraperi-

* Read before the Knoxville Academy of Medicine, April 7.

toneally. At the same time we gave her 50 cc. of the father's blood. Her improvement was so apparent that she was given 15 cc. of blood intramuscularly on alternating days, for three treatments. A total of 95 cc. of whole blood was administered. Her temperature gradually became normal. November 15, her weight was 16 pounds 13 ounces (7.6 Kg.). Her desire for food increased, and on November 22 her weight was 17 pounds 4 ounces (7.8 Kg.). December 1, she weighed 19 pounds (8.6 Kg.) and was apparently normal.

The blood was not administered as a specific medication, but the child's rapid recovery and response to the treatment caused us to wonder if it had some therapeutic value other than the general or supportive properties.

The malady began with the child's being fed almost entirely on breast milk and perhaps some pasteurized cow's milk, as the mother admitted having allowed her to drink a "sup" occasionally.

Unfortunately, we were unable to come to any definite conclusions as to the source of infection. We intended studying the mother's milk, as this is the only case recorded in this institution in the seventeen years of its existence. The mother disappeared in November, preventing any further studies along these lines.

The child had a rather typical but short course of undulant fever and seemed to respond to the administration of blood from the father.

TRANSMISSION OF MALARIA THROUGH INJECTION OF WHOLE BLOOD *

I. R. JANKELSON, M.D., BOSTON

This case is reported (1) to emphasize the possibility of transmitting malaria by a blood transfusion; (2) to show that a man may be a carrier of the plasmodium for almost forty years; (3) to show that a routine history may not disclose a previous malarial infection and that every donor of blood should be questioned about it; (4) to emphasize that whenever a suspicion of malaria is raised an examination of the blood for plasmodia should be made.

REPORT OF CASE

J. R., a man, aged 42, Italian, a machinist, was seen first at this clinic, Jan. 11, 1929, for a question of peptic ulcer. For nine or ten years he had intermittent epigastric pain, coming two hours after meals. This pain was relieved by sodium bicarbonate. There were long periods of remission when the patient was entirely free from pain. He had some belching and rarely heartburn. For many years the patient had a diarrhea, having six or seven watery stools daily. There was no blood nor mucus in the stools. He also had an arthritis of his spine for which he was treated in the electrotherapy department. His habits were good except that he drank about a quart of wine daily.

His past history was entirely negative. He could not remember having had any of the usual children's diseases except measles.

The physical examination was negative except for marked pyorrhea alveolaris and some impaired motility of the lumbar spine. The patient had had a gastro-intestinal roentgen examination, which did not show any demonstrable pathologic changes within that tract.

Under routine modified Sippy diet, alkalis and belladonna, his abdominal pain subsided in a few weeks, but his diarrhea persisted. The possibility of some parasitic intestinal infection was considered. Careful repeated stool examinations did not reveal ova or parasites.

In June, 1929, because of the persistent diarrhea, another gastro-intestinal roentgen examination was made, which revealed multiple diverticula involving the entire colon. Since then his diarrhea was more or less controlled by a low residue diet and bismuth or tannigen. The patient kept his weight, was afebrile, and rarely had more than two movements. The stools, however, were usually pasty, rarely being formed.

In October, 1929, the patient's wife gave birth to a full time baby. This infant had hemorrhagic disease of the new-born. The father gave several ounces of his blood in the treatment of this condition. When 6 weeks old the child was readmitted with an irregular temperature, and the malarial parasite of the quartan variety was demonstrated in a blood smear. The infection was transmitted from the father to the child by the way of injection of blood. Accordingly, a diligent search of the patient's blood was undertaken and the plasmodium of the quartan type in the asexual cycle was found in his blood. On further questioning, the patient recollected that he had malaria when still in Italy (the patient had lived in Boston for the last twenty years) at the age of 5. He also admitted a rare chill, lasting about one hour, coming about once a year or two and followed by profuse perspiration.

COMMENT

There can be no doubt whatever that the malarial infection of the child was caused by direct transmission of *Plasmodium malariae* from the father. In this climate, in the month of November, no other possible route of infection could be traced. Neither the donor of the blood nor his physicians were aware of the fact that he was a carrier of malaria. Therein lies a danger.

The recipient of blood, whose health condition is usually precarious, is entitled to every and all safeguards against transmission of disease from the donor. Whenever possible, a smear of the donor's blood should be examined morphologically for the plasmodium. This should surely be done in every case in which the donor gives a history of having had malaria.

A few weeks ago the Massachusetts State Board of Health circularized the physicians of the state, advocating the intramuscular injection of adult whole blood for the modification or prevention of measles. The danger of infecting a child with malaria while trying to prevent measles is particularly great in all cases in which the parent or parents were born in the well known malaria countries, such as South America or the Mediterranean region.

While this report was being prepared for publication, I saw another case in which an Italian woman was given a transfusion in the treatment of a severe uterine hemorrhage. The donor was her husband, an Italian who had malaria of the tertian type. The husband was a carrier of the same type of malaria which was discovered after the development of the disease in the patient.

483 Beacon Street.

THE INCIDENCE OF EMBOLISM IN TREATMENT OF VARICOSE VEINS WITH SCLEROSING SOLUTIONS: REPORT OF A FATALITY

ISIDORE SILVERMAN, M.D., BROOKLYN

The occurrence of embolism following the injection of varicose veins with sclerosing solutions has always been greatly feared, although actual experience has shown it to be a most rare phenomenon.

A search of the literature has revealed a total of only nineteen cases of embolism following injection in hundreds of thousands of cases. Of these, fourteen were fatal and five patients recovered. In the present paper I am reporting another case of fatal embolism, making the total twenty cases, with fifteen fatalities and five recoveries. For the sake of completeness, I might add two cases that resulted in death from acute mercurial poisoning following the injection of a few cubic centimeters of 1 per cent corrosive mercuric chloride and red mercuric iodide, respectively. This brings the fatalities from the injection treatment up to seventeen, although the cases tabulated in group 2 may well be subtracted from this total, as in all probability the operative procedures were far more likely to have been responsible for the fatalities.

On examining the cases in groups 1 and 2, one is at first struck by the large volumes of solution injected, ranging from 20 to 90 cc. Using only group 1 for comparison, I found that, in nine cases in which the solution used is mentioned, sodium chloride was used six times, Pregl's solution of iodine, a blood coagulant, once, and sodium salicylate and a quinine preparation once each. In every case in which the volume used is mentioned, the volume is found to be well above the average safe dose per

* From the gastro-intestinal clinic of the Boston City Hospital.

injection. There appears to be no good reason for attaching any importance to the sodium chloride itself.

The aforementioned observations are by no means new ones. Linser, long ago, warned against using sodium chloride in quantities over 5 to 10 cc. at one time. Sicard did the same for sodium salicylate. Genevrier advised 2 cc. as the maximal dose for quinine and urethane. Kilbourne states that Meisen, using the first two of these solutions, tried to increase the dose to 25 cc. at one sitting and developed two cases of nonfatal emboli. He called 25 cc. the "infarct producing dose."

The statement is made that rest in bed favors embolism. It will be seen that only two cases in group 1 followed this treatment, and, as far as group 2 is concerned, the emboli were much likelier to have occurred from the operative procedure than from the recumbent position. Phlebitis is still treated by rest in bed and elevation where the danger of embolism is so much greater. Why should one fear rest in bed for a chemical venitis when the danger of embolism is so much smaller?

sequently attested by her family physician, were good. There was no history of pulmonary, renal or cardiac involvement. She had had several normal pregnancies. Examination of the right leg revealed a chain of markedly dilated veins extending across the tibial crest and measuring about 8 inches (20 cm.) in length and 1 inch (2.5 cm.) in breadth. These varicosities were injected in my presence with a total of 25 cc. of 25 per cent sodium chloride solution in five different places, and compresses were applied immediately each time.

August 8, two days later, by a most peculiar coincidence, I was asked by a physician to see a private patient of his who had been treated for varicose veins, and on my arrival I recognized with surprise the patient who is the subject of the present report.

She was complaining of severe pain about the areas of injection. There was some dusky discoloration about the veins, which were collapsed at the points where the compresses were applied, and very hard and tender between the points of con-

Embolism Following Injection of Varicose Veins

No.	Solution Used	Amount, Cc.	Ambulatory or in Bed	Result	Days Later	Reporter
	Group 1. Embolism Resulting From Injection Treatment Alone					
1	Sodium chloride 20% Invertose 50%	50 40	Ambulatory	Died	8–10	Olson: J. A. M. A. **89**: 692 (Aug. 27) 1927
2	Sodium chloride 20%	25	.....	{Emboli {Died	{10 {33	Lomholt: Ugesk. f. Læger **89**: 7 (Jan. 6) 1927
3	Pregl's solution	60	.....	Died	14	Hohlbaum: Zentralbl. f. Chir. **49**: 218 (Feb. 18) 1922
4	.....	..	Ambulatory	Died	..	Kuhnau; Zentralbl. f. Chir. **56**: 2580 (Oct.) 1929
5	.....	..	.....	Died	..	Faure, quoted by Vigyazo: Zentralbl. f. Chir. **55**: 70 (Jan. 14) 1928
6	.....	..	.....	Died	..	Leval: Monatschr. ungar. Med. **1**: 201, 1927
7	Sodium chloride	..	Ambulatory	Died	14	Linser: München. med. Wchnschr. **71**: 418 (March 28) 1924
8	Sodium salicylate	..	Ambulatory; massage	Died	6 weeks	Kilbourne: J. A. M. A. **92**: 1320 (April 20) 1929
9	.....	..	.....	Recovered	..	Redner, quoted in Nobl: Wien. med. Wchnschr. **76**: 1280, 1926
10	Quinine preparation	..	Ambulatory	Recovered	..	Burton: U. S. Vet. Bur. M. Bull. **6**: 854 (Oct.) 1930
11	Sodium chloride 20%	15	.....	Died	..	Anschutz-Lohr: Zentralbl. f. Chir. **56**: 3211 (Dec. 21) 1929
12	Sodium chloride 25%	25	In bed	Died	10	
13	Sodium chloride 20%	..	In bed	Recovered	..	Keller: Zentralbl. f. Chir. **56**: 3213 (Dec. 21) 1929
	Group 2. Embolism Resulting From Injection Treatment and Operative Intervention					
14	Sodium chloride	..	Excision of small area	Died of sepsis	..	McPheeters and Rice: J. A. M. A. **91**: 1090 (Oct. 13) 1928
15	.....	..	Hemorrhoidectomy	Died	6 weeks	Hirsch-Nobl: Wien. med. Wchnschr. **39**: 1310 (Nov. 4) 1926
16	.....	..	Thrombotic piles	Died	4 weeks	Schonhoff, quoted in Lumholt: Ugesk. f. Læger **89**: 718 (Aug.) 1927
17	Sugar solution	..	Ligation; excision	Died	10	Eiselsberg, quoted in Moszkowicz: Wien. med. Wchnschr. **77**: 461 (April 2) 1927
18	Sodium chloride 20%	90	Ligation; excision	Died	20	McPheeters and Rice: J. A. M. A. **91**: 1090 (Oct. 13) 1928
19	.....	..	Appendectomy	Recovered	..	De Takáts: J. A. M. A. **96**: 1111 (April 4) 1931
20	.....	..	Previous phlebitis	Recovered	..	Bingel, quoted in Liebholz: Med. Welt. **4**: 507 (Oct. 18) 1930
	Group 3. Cases of Mercurial Poisoning					
21	Red mercuric iodide 1%	1	.....	Died	..	Hammer: Deutsche med. Wchnschr. **45**: 45 (Jan.) 1919
22	Corrosive mercuric chloride 1%	3-7	.....	Died	..	Mundt: Clin. Med. & Surg. **37**: 361 (May) 1930

One can easily understand the great rarity of emboli following the injection treatment, when one recalls that the essential action of the solutions injected is a sclerosing process involving the coats of the veins. None of the solutions used today have a direct coagulating action on the blood itself. The action is solely limited to a chemical irritation of the intima of the vein wall resulting in destruction of the endothelium, round cell infiltration, fibroblastic proliferation, and a gradual sclerosis of the media and adventitia, and sometimes the perivenous connective tissue. The blood clot forms only after the endothelial lining of the intima is destroyed and layers of fibrin are deposited on the wall of the vein. This may occur soon after injection or hours later. The reaction has been called "venitis" in contradistinction to "phlebitis." It differs from the latter in being usually localized to the point of irritation, in subsiding rapidly and in showing no tendency to recurrence, the clot being more tenaceous and organization by fibroblasts occurring rapidly.

REPORT OF CASE

The following fatality occurred and was discovered accidentally by me:

Mrs. Mary M., aged 44, of Italian parentage, came to Kings County Hospital Dispensary in the Surgical Service of Dr. Joseph Tenopyr, Aug. 6, 1929, for treatment of varicosities of both legs. Her family history and physical condition, as subsequently attested by her family physician, were good. There was no history of pulmonary, renal or cardiac involvement. She had had several normal pregnancies. Examination of the right leg revealed a chain of markedly dilated veins extending across the tibial crest and measuring about 8 inches (20 cm.) in length and 1 inch (2.5 cm.) in breadth. These varicosities were injected in my presence with a total of 25 cc. of 25 per cent sodium chloride solution in five different places, and compresses were applied immediately each time.

August 8, two days later, by a most peculiar coincidence, I was asked by a physician to see a private patient of his who had been treated for varicose veins, and on my arrival I recognized with surprise the patient who is the subject of the present report.

She was complaining of severe pain about the areas of injection. There was some dusky discoloration about the veins, which were collapsed at the points where the compresses were applied, and very hard and tender between the points of constriction. No edema and no tenderness along the internal saphenous vein were noticed. The pulse and temperature were normal. The pain was relieved by codeine. The patient had been in bed for the last twenty-four hours and was advised to remain there and have cold compresses applied locally.

August 11, I was again asked to see this patient. It was now five days after the injection, the patient having remained in bed all this time. The appearance of the leg was the same as previously described. The pain had considerably diminished. The pulse was 92, the temperature 98.8 F. This was the last time I saw the patient.

August 16, I met the family physician, who greeted me with the statement that Mary M. was dead. This happened on the tenth day following the injection. Then he told how the patient died suddenly in his presence. He was sitting near her bed, he said, when he asked her to sit up and undo her dressing. She sat up and did so, and, as he was gently palpating the leg, the patient made an effort as if to speak, stopped suddenly, gasped for breath, and before the doctor could realize what had happened, she took two or three short breaths and died.

It is possible that this would not have happened if the patient had been kept ambulatory, but it is more likely that it could have been avoided if only from 5 to 10 cc. of sodium chloride had been injected at only a single point.

2601 Farragut Road.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

LIVER EXTRACT-LEDERLE.—A concentrated, water-soluble, nitrogenous, nonprotein fraction obtained from fresh mammalian liver. It is supplied in vials containing an amount of powdered extract representing approximately 100 Gm. of fresh, whole liver.

Actions and Uses.—Liver extract-Lederle is proposed for use in the treatment of pernicious anemia and tropical sprue.

Dosage.—Liver extract-Lederle is administered orally. The optimum daily dose in the beginning of the treatment of very sick patients having a red blood cell count of two millions or less is the contents of from six to eight vials; for the average case, an initial daily dose of the contents of six vials continued until the red blood cell count and hemoglobin return to normal.

Manufactured by Lederle Laboratories, Inc., Pearl River, N. Y. No U. S. patent or trademark.

To prepare liver extract-Lederle, the finely minced livers of edible animals are added to water. The mixture is adjusted to a *ph* of from 5.4 to 5.8, heated to 75 C. to coagulate the protein, held to this temperature for thirty minutes, and filtered. The filtrate is concentrated in vacuo to small bulk, and enough 95 per cent alcohol is added so that the final mixture contains 65 per cent of alcohol by volume. The precipitate is discarded and the alcoholic filtrate concentrated in vacuo, sufficient absolute alcohol being added to precipitate the active material, which is subsequently dried in vacuo and granulated. It is soluble in water; insoluble in alcohol, acetone, or ether. One Gm. of the finished product represents approximately 45 Gm. of fresh, whole liver.

ANTIRABIC VACCINE (See New and Nonofficial Remedies, 1931, p. 358).

Hixson Laboratories, Inc., Johnstown, Ohio.

Rabies Vaccine (Hixson).—An antirabic vaccine prepared according to the general method of David Semple (phenol killed). The brains of rabbits killed after inoculation with fixed rabies virus are emulsified in a 1 per cent phenol solution by shaking with steel beads. The emulsion is passed through a 100 mesh sieve, diluted to yield an 8 per cent emulsion, incubated at 37.5 C. for twenty-four hours, and then diluted with an equal volume of physiologic solution of sodium chloride so that the finished product contains 4 per cent of brain substance, 0.5 per cent of phenol, and 0.85 per cent of sodium chloride. Marketed in packages of seven vials each containing 2 cc.; in packages of fourteen vials each containing 2 cc.; and in packages of fourteen syringes each containing 2 cc. The content of a syringe or vial (one dose) is administered daily over a period of from fourteen to twenty-eight days according to the severity of the case. For bites about the head or neck two doses are given daily for seven days followed by one dose daily for from seven to fourteen days, according to the severity of the bite.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

PLEZOL BREAD

Manufacturer.—The Baker Bread Company, Zanesville, Ohio.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, 80 per cent patent flour of Northwest wheat, water, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride, potassium bromate and patent wheat flour are mixed in a high speed mixer. The sponge dough is fermented for from four to five hours, after which are added flour, water, salt, sucrose, lard, sweetened condensed skim milk, powdered skim milk, malt syrup and a partially hydrolyzed starch to make the completed dough, which is cut into pieces of desired weight by machine. The pieces are fermented for a short time, molded by machine into loaf form, and panned. The panned dough is fermented and then baked for from thirty-two to forty minutes in a hearth oven with automatic steam and temperature regulation. The cooled loaves are wrapped in wax-paper.

The factory, equipment and storage rooms for the materials used are kept in strictly sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture (entire loaf)	37.5
Ash	1.26
Fat (ether extract)	0.5
Protein (N × 6.25)	9.4
Crude fiber	0.2
Carbohydrates (by difference) other than crude fiber	51.0

Calories.— 2.47 per gram
70.1 per ounce

Claims of Manufacturer.—A bread of good quality.

HECHT'S FINE TWINS BREAD

Manufacturer.—Hecht's Bakery, Bristol, Tenn.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, a mixture of patent flours of Northwest and Southwest wheats, water, shortening, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate are mixed in a high speed mixer. The sponge dough is fermented for from four to five hours, after which are added flour, water, salt, dextrose, sweetened condensed skim milk and shortening to make the completed dough, which is cut into pieces of desired weight by machine. The pieces are fermented for a short time, molded by machine into loaf form, and panned. The panned dough is further fermented and then baked for from thirty to thirty-five minutes in a traveling oven with automatic temperature and steam regulation. The cooled loaves are wrapped in wax-paper.

The factory, equipment and storage rooms for the materials used are kept in strictly sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture (entire loaf)	37.3
Ash	1.71
Fat (acid hydrolysis method)	3.0
Protein (N × 6.25)	9.4
Crude fiber	0.4
Carbohydrates (by difference) other than crude fiber	48.2

Calories.— 2.57 per gram
73.0 per ounce

Claims of Manufacturer.—A bread of good quality.

CARNATION FLAKED WHEAT

Manufacturer.—Carnation Company, Oconomowoc, Wis., and Seattle, Wash.

Description.—A flaked, steam cooked, white wheat with the coarser bran portion removed.

Manufacture.—White wheat cleaned of foreign material, small kernels and broken fragments by the usual milling operations is thoroughly washed and the outer coarser bran portion is removed, the inner portion being retained. The prepared wheat is steam cooked under pressure. The softened kernels are run into thin flakes, which are air dried. The flakes are automatically packed into paper cartons.

The plant and machinery are kept in excellent sanitary condition.

Chemical Composition.—

(proximate analysis)	per cent
Moisture	10.1
Ash	1.65
Protein (N × 5.7)	10.8
Fat (ether extract)	2.2
Crude fiber	1.2
Reducing sugars as invert	0.1
Sucrose	2.7
Carbohydrates (by difference) other than crude fiber	74.0
Phosphorus (P)	0.314
Iron (Fe)	0.005
Calcium (Ca)	0.037

Calories.— 3.59 per gram
102.0 per ounce

Claims of Manufacturer.—Carnation Flaked Wheat is a wholesome "hot breakfast cereal" (for home cooking), containing all portions of the wheat berry excepting the outer coarser portion of the bran.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JULY 18, 1931

IRON AND COPPER IN THE DIET

The story of the rôle of iron in nutrition has become familiar to the public as well as to the medical profession. Red blood cells, with all that they represent for human well being, and iron have become firmly associated in the public mind. The fact that the element is a constituent of the chromatin substances that are regarded as important for some of the characteristic "vital" activities within body cells other than the erythrocytes is not so generally appreciated. Sherman [1] accepts the current indications that small amounts of iron in other forms may play an important part in catalyzing the oxidation reduction reactions through which the potential energy of the oxidizable foodstuffs is made kinetic for the support of the work of the active tissues of the body.

Meanwhile there have developed evidences that certain mineral elements which occur in small quantities only in our natural foods may enter into the nutritive exchanges of the organisms in ways more important than has been heretofore believed. For many years, claims of the biologic significance of a number of such elements have been heard. They are almost inevitable contaminants of foods, so that it has been extremely difficult to determine decisively whether zinc, nickel, cobalt, manganese, copper and others are chance constituents of the animal organism, finding their way inadvertently into the tissues and fluids, or whether one or more of them really function in some essential process.

Recently attention has been vigorously focused on one of these elements by the discovery that copper possesses the property of supplementing iron in forming hemoglobin in certain types of experimental anemia. Nutritional anemia apparently can best be corrected in several species by the addition of copper as well as iron to the defective rations. In fairness it should be added that, while some investigators do not agree as to the specificity of copper for hemoglobin formation, it seems to be generally held at present that copper occupies a unique and important position in this respect. Furthermore, although recent work has not assigned to manganese as striking a rôle as that given to copper, there is considerable evidence of important functions performed by manganese.[2] In fact, several investigators [3] have argued that manganese as well as copper plays a part in the regeneration of hemoglobin.

This has made it more desirable to know some of the details regarding the distribution of these mineral elements in our common foods. Many analyses have become available. Most of them are expressed in percentages that call for mathematical calculations not easily adapted to our daily meals. Hodges and Peterson [2] have recently pointed out that expression of the mineral content in a unit of cooked food, or per serving, translates into usable form figures that are virtually meaningless to the average individual. While it may seem that a serving of food is an indefinite unit, the plus and minus errors due to the use of this unit would probably compensate one another in the intake of food for a day. Also, because of the great variations in the mineral content of different samples of the same food—variations that may be 100 per cent or more—it is doubtful whether there is anything to be gained by expressing the figures on a more definite basis. Since a 50 per cent margin of safety is to be adopted in all cases, the serving unit is probably sufficiently accurate. The Wisconsin chemists [2] have published an elaborate series of the requisite calculations which have exceptional interest in indicating what the presumptive daily intake of the American people is. The manganese varies from 0.80 mg. for a child 3 to 4 years old to 8.41 mg. for a working man; copper from 0.63 mg. for the young child to 4.81 mg. for the working man; iron from 4.50 mg. for the child to 36.12 mg. for the man. The average daily intake based on six family menus given by the same author is as follows: manganese, 2.39 mg.; copper, 2.26 mg.; iron, 15.44 mg. On the reasonable assumption that such figures, based on estimated consumption of the conventional foods represent a satisfactory intake of the debated mineral elements—and national well being makes this seem warranted—the data cited may serve as general guides in cases for mineral therapy.

A review of the composition of more than a hundred different foods indicates that the manganese varies from 0.005 mg. in butter to 3.64 mg. in wheat bran; copper from 0.003 mg. in celery to 4.41 mg. in calf liver; iron from 0.03 mg. in butter to 25 mg. in pork liver. Food portions richest in manganese are wheat

1. Sherman, H. C.: Chemistry of Food and Nutrition, New York, Macmillan Company, 1926.

2. Hodges, Mildred A., and Peterson, W. H.: Manganese, Copper and Iron Content of Serving Portions of Common Foods, J. Am. Dietet. Assn. **7**: 6 (June) 1931.

3. Titus, R. W.; Cave, W. H., and Hughes, J. S.: Manganese-Copper-Iron Complex as Factor in Hemoglobin Building, J. Biol. Chem. **80**: 565 (Dec.) 1928. Titus, R. W., and Hughes, J. S.: The Storage of Manganese and Copper in the Animal Body and Its Influence on Hemoglobin Building, ibid. **83**: 463 (Aug.) 1929. Beard, H., and Myers, V.: Blood Regeneration in Nutritional Anemia: Influence of Iron, Iron and Copper, Nickel, Cobalt, Germanium or Sodium Germanate, Proc. Soc. Exper. Biol. & Med. **26**: 510 (March) 1929. Beard, H., and Myers, V.: Further Observations on the Effect of Inorganic Elements in Nutritional Anemia, J. Biol. Chem. **87**: xxxix (March) 1930. Faludi, F.: Therapeutic Experiments with Internal Use of Manganese, Deutsche med. Wchnschr. **54**: 470 (March 23) 1928.

bran, blueberries, whole wheat, split peas, and navy beans. Those richest in copper are calf liver, oysters, beef liver, mushrooms, currants and chocolate. Those richest in iron are pork liver, beef liver, spinach, lima beans, calf liver, and navy beans. Vegetables and cereals are the chief contributors of iron. Fruits are an important source of all three elements. To the query "Have you had your iron and copper today?" the computations of Hodges and Peterson now make it relatively easy to supply an answer.

CAROTENE AND VITAMIN A

The yellow pigment carotene is apparently the plant source of the vitamin A of animal tissue. The suspicion of a relationship of yellow color in dietary substances, such as yellow corn, sweet potatoes and certain vegetables, was ventured by Steenbock and others several years ago. After a period of uncertainty and even denial, the identity seems no longer to be questionable. There was the demonstration that yellow corn furnished enough of the fat-soluble vitamin to allow growth at a normal rate in experimental animals, whereas the feeding of white corn under similar conditions resulted in nutritional failure. Continued confirmation of the ability of purified carotene to function as vitamin A is being reported from various laboratories.

The best information at present indicates that carotene and vitamin A are not identical, but rather that the pigment functions in the animal body as a precursor of the familiar vitamin. This would harmonize the observation that the intensely yellow pigment is synthesized in plants while its colorless derivative is stored in animal tissues. This will explain the vitamin potency of yellow vegetables on the one hand and liver oils—for example, cod liver oil—on the other, despite the marked color differences between them.

As attention is now bound to be directed to carotene and its occurrence in nature, consideration should be given to the possible reasons for the earlier failures to establish the physiologic virtues of isolated carotene. Recent investigations have demonstrated that this pigment is susceptible to chemical changes. For example, pure crystals of the deeply colored carotene tend to bleach unless they are carefully preserved. The decolorized product has lost its physiologic activity. This is what the earlier observers failed to recognize. Studies of Olcovich and Mattill [1] at the State University of Iowa have demonstrated that carotene solutions may be bleached by heat, by ultraviolet rays and by the presence of autoxidizable fats. The presence of hydroquinone delays for a variable length of time the bleaching of carotene solutions by any of these mechanisms. Surprisingly, the fading of carotene crystals at elevated temperatures is not an oxidation. Apparently the decolorizing change is the result of an intramolecular rearrangement or, possibly, a polymerization. Therefore, as Olcovich and Mattill say, the commonly measured stability of vitamin A (carotene) in various vegetable foods exposed to heat and light does not depend on carotene itself or on the presence of oxygen, primarily, but is conditioned by the presence of other substances. Carotene is also decolorized when it is transformed to vitamin A in the animal body. While this change apparently involves the loss of prooxidant activity, the analogy ceases here. Whatever the change, it is such as to leave intact that portion of the molecule which is concerned in its physiologic action. That structure still retains its instability toward heat, ultraviolet radiation and oxygen. The potency of pure carotene is as striking as that of the other known vitamins. As little as 0.00005 Gm. permits an increment of growth in a small animal (100 Gm.) deprived of vitamin A. This represents a distribution of one part in two million parts of body substance.

1. Olcovich, H. S., and Mattill, H. A.: The Unsaponifiable Lipids of Lettuce: I. Carotene, J. Biol. Chem. **91**: 105 (April) 1931.

Current Comment

THE VOMITING OF PERITONITIS

Vomiting is an almost universal symptom of acute peritonitis. It accompanies the pain and nausea that furnish subjective evidence for the diagnosis. The stages and type of vomiting are of importance in determining the extent of the involvement and the immediate outlook for the patient. These facts should suffice, if any explanation is needed, to justify and to demand a careful consideration of the nature of the emesis. Pharmacologists assert that most emetics produce vomiting by irritating the stomach; others, such as apomorphine, by stimulating the medullary centers. In addition to the locus of irritation, the nature of the effective stimulus and the paths of emetic impulse deserve consideration. Today one is warranted in asserting, or at least assuming for purposes of investigation, that the immediate stimulus may be a nervous one; or the active agent may be of the nature of a hormone or toxin carried by the blood to a sensitive structure that can initiate the vomiting reflex. Some of these various possibilities have been under consideration in the department of surgery [1] at the Washington University School of Medicine in St. Louis. The humoral pathway was seemingly disproved by the fact that irritant emulsions introduced into the peritoneal cavity were found experimentally to produce vomiting within a few seconds—a reaction time that seems to preclude a chemical stimulation of the vomiting center and still be entirely within the possibilities of a reflex phenomenon. Even more significant is the demonstration that peritonitis failed to produce vomiting if certain nervous pathways to or from the abdomen were severed. According to these observations, emetic impulses generated in peritonitis pass to the medullary center by way of sensory nerve

1. Walton, F. E.; Moore, R. M., and Graham, E. A.: The Nerve Pathways in the Vomiting of Peritonitis, Arch. Surg. **22**: 829 (May) 1931.

fibers that are included in both the vagal and the sympathetic trunks. Section of these prevents the occurrence of vomiting in peritonitis, although phrenic and other cerebrospinal nerve paths are left undisturbed. As by sympathectomy alone or by vagotomy alone vomiting in peritonitis is not abolished, the afferent emetic impulse evidently can traverse either pathway with facility. Walton, Moore and Graham [1] have pointed out that anatomists generally seem to believe that the parietal peritoneum is chiefly supplied by cerebrospinal somatic afferent nerves, whereas the visceral peritoneum receives its supply from the visceral afferent fibers that course in the vagal and sympathetic trunks. If this view is tenable, the St. Louis experiments indicate that it is the irritation of the visceral and not of the parietal peritoneum that gives origin to the vomiting in peritonitis. It seems to be established also that there is some central coordinating mechanism concerned with the vomiting act. Thus the muscles concerned and the efferent nerves do not vary with the causative or afferent impulse; and the discussion of the efferent paths resolves itself into a consideration of the innervation of these muscles. It can now be understood, further, why pain in certain types of patients can be abolished by infiltration of the skin with a local anesthetic while vomiting persists. The blocked pain fibers follow cerebrospinal paths, while strong visceral afferent impulses continue to reach the high centers through the sympathetic and vagal chains. The problems of peritoneal irritation have thus become measurably clearer.

Association News

REPORT OF COMMITTEE ON MEDICOLEGAL PROBLEMS

The Board of Trustees at its meeting, June 7, approved the following report and recommendations of the Committee on Medicolegal Problems:

The detection and punishment of crime is a major problem today throughout the entire country. Experience abroad and a limited experience in the United States have shown that science can do much to aid in accomplishing those ends. Frequently the first step in the detection of crime, the identification of the living and the dead—sometimes the identification of mutilated portions of dismembered bodies—depends on anthropometric measurements, finger-prints, evidences of age, sex, race, preexisting diseases, and old injuries, such evidence as is discoverable only by skilled pathologists. Examinations of the dead body, by inspection and autopsy, to determine the cause and time of death, call for like services. The nature and origin of stains must be accurately determined, procedures that call for scientific technic and accuracy. Vomitus, excreta, and the contents of the intestinal tract, the various tissues and organs of the body, and various substances found in and about the place of death must be analyzed to determine the presence or absence of poisons, the nature of food and drink ingested by the deceased or the accused, and so on. Inquiries must be made into the mental states of persons from whom complaints are received and of persons under arrest or on trial, whether those mental states are due to narcotic drugs, alcohol, injuries, disease, congenital defects, or insanity. Scientific investigations are necessary in connection with charges of criminal abortion, rape and infanticide. On the borderline of medicine, studies must be made to determine what relations there are, if any, between a given projectile, powder stain, powder residue, cartridge case, and weapon, and a given wound. Somewhat further afield are studies of disputed documents, foot-prints, the tracks left by vehicles, impressions of jimmies, and marks left by the use of oxyacetylene torches and explosives in connection with safe-cracking.

The character and extent of the equipment necessary for the several purposes named in the preceding paragraph, and the character and extent of the knowledge and skill necessary for the practical utilization of that equipment in the everyday detection of crime and the punishment of criminals, are such as now preclude their utilization by the average community. Only the states themselves and in a few instances the larger cities within the states are able to finance such activities. Moreover, in communities of average size or below, occasions for the utilization of many of the devices necessary for the purposes named and for the services of persons skilled in the use of those devices are so infrequent as to make the cost of operation unduly great, when compared with the units of work done.

The only logical procedure seems to be for each of the several states to provide and maintain the equipment and staff necessary for the service of all communities within its borders. The establishment of such agencies by the several states would in no way interfere with the establishment of similar agencies by such municipalities as need and can afford them. On the other hand, equipment and staff maintained by the state would be at the command of all counties, muncipalities, towns and villages within its jurisdiction, as they might need them from time to time. The cost of such activities might well be borne by the state. If, however, the state should deem it advisable to impose a part of that cost on counties, municipalities, towns and villages, a definite schedule of charges might well be established.

Such a state organization as has been outlined would serve not only to aid directly in the detection and punishment of crime but also to serve indirectly toward that end by contributing toward the proper instruction of the peace officers and agents of the state, and of every county, municipality, town and village, in methods for the investigation of crimes and suspected crimes. Such officers and agents could be taught how best to collect and preserve such evidence as the circumstances afford and how to avoid destroying or marring essential evidence. State agencies of the type named might well have connected with them experts qualified to keep accurate records of crime and crime prevention, so as to measure the success or failure of activities for those ends.

Organizations such as have been described have been variously dubbed medicolegal institutes, criminologic institutes, and scientific crime detection laboratories. The name seems hardly material, although the name last stated is hardly broad enough to cover the true functions of such organizations.

It seems to your committee that action to promote the establishment of such organizations in each of the several states would be in the interest of good government. Your committee recommends, therefore, that it be authorized to take action toward that end, working in conjunction with and through the Bureau of Legal Medicine and Legislation.

H. DOUGLAS SINGER.
WINFRED OVERHOLSER.
WILLIAM C. WOODWARD.
LUDVIG HEKTOEN.
WILLIAM J. STAPLETON, JR.

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday and 10:30 on Saturday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

July 20. What the Physician Has Done for Children.
July 25. Hay! Hay!

Five minute health talks may be heard over the Columbia Broadcasting System on Monday, Wednesday, Thursday and Saturday from 1 to 1:05 p. m., daylight saving time.

The program for the week is as follows:

July 20. When Are Workers Well Dressed?
July 22. When the Adolescent Girl Goes to Camp.
July 23. Sleeping Sickness.
July 25. Can Faith Cure Disease?

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

COLORADO

Society News.—Four Pueblo physicians conducted a symposium on diabetes before the Crowley County Medical Society, Ordway, June 9. Speakers were Drs. Rudolph H. Kampmeier, from the point of view of the internist; John D. Geissinger, the pediatrician; George E. Rice, the surgeon, and Guy H. Hopkins, the ophthalmologist.——The Mesa County Medical Society was addressed, May 19, in Grand Junction by Dr. Edward H. Peterson, Grand Junction, on hypertension.——Drs. Gerrit Heusinkveld and Thaddeus P. Sears, Denver, spoke before the Northwestern Colorado Medical Society, Oak Creek, May 29, on "Management of Difficult Labors" and "Common Diseases of the Heart," respectively.——Dr. Constantine F. Kemper, Denver, among others, spoke on diabetes before the Otero County Medical Society, Las Animas, May 14.——A symposium on chest surgery was conducted by Drs. Charles O. Giese and Lewis H. McKinnie, Colorado Springs, and Kenneth D. A. Allen, Denver, at the meeting of the Pueblo County Medical Society, May 19.——Dr. John M. Foster, Jr., Denver, read a paper on "Penetrating Wounds of the Lung in Civil Practice" before the Weld County Medical Society, June 1.——Dr. William A. Bunten, Cheyenne, Wyo., spoke on "Diagnosis and Treatment of Cerebrospinal Injuries" before the Larimer County Medical Society, June 3.

DISTRICT OF COLUMBIA

Personal.—Dr. William Gerry Morgan, past president of the American Medical Association, and professor of gastroenterology in Georgetown University School of Medicine for twenty years, was recently appointed a member of the board of regents of the university.——Dr. Charles W. Stiles, U. S. Public Health Service, completed forty years of active government service, June 30, and will go on the retired list, October 1.

FLORIDA

Licenses Revoked.—At a meeting of the state board of medical examiners in Jacksonville, June 15, the licenses of the following physicians were revoked:

Dr. Edward K. Tullidge, Miami, for having violated the oath in making application for license, in that he stated he had never been convicted of a crime involving moral turpitude. Records of the U. S. Navy show that he was convicted of such a crime while in the service.
Dr. John Banks, Miami, for violation of the Harrison Narcotic Act.
Dr. David B. Harvey, Mt. Dora, for having been convicted of murder.
Dr. Paul C. Ronning, West Palm Beach, for having fraudulently received a medical license and diploma.

ILLINOIS

Society News.—Dr. Frederick B. Balmer, Chicago, spoke on "Medical Economics" at the annual picnic of the Douglas County Medical Society, June 24, at Patterson Springs. Members of the Coles-Cumberland County Medical Society were guests.——The Greene County Medical Society was addressed by Drs. Henry A. Chapin, Jacksonville, on "The Treatment of Toxic Goiter," and Albyn L. Adams, Jacksonville, on "The Relationship of Goiter to Certain Eye Troubles" at the annual picnic, June 12, at Greenfield.

Chicago

Similarity of Names in Revocation of License.—Dr. Ethel Draikin-Rice, 2921 North Clark Street, writes that she is not the Dr. Ethel Rice noted in the news in THE JOURNAL, July 4, p. 36, and is not related to the Dr. Rice whose license was revoked.

Patten Lecture in Bacteriology.—Arthur Isaac Kendall, Dr.P.H., of the department of research bacteriology of Northwestern University Medical School, will give the James A. Patten lecture in bacteriology at the university, July 22. His subject will be "Observations upon the Filtrability of Bacteria, Including a Filtrable Organism Obtained from Cases of Influenza."

Personal.—Dr. James A. Doull, professor of hygiene and public health, Western Reserve University School of Medicine, Cleveland, is visiting professor of bacteriology at the University of Chicago for the summer quarter.——Dr. Russell M. Wilder, chairman of the department of medicine at the University of Chicago since May, 1929, resigned, July 1. He will continue as professor of medicine.

Hospital News.—Mrs. Elizabeth S. McElwee, who gave to the Home for Destitute Crippled Children funds for the new Nancy Adele McElwee building recently dedicated at the University of Chicago, has financed also the renovation of the old buildings of the home, which will now be used as an outpatient clinic. The university will provide professional care for the patients and will be free to use them for study.

IOWA

Society News.—Dr. Erwin R. Schmidt, Madison, Wis., among others, gave an illustrated lecture on "Surgery of Perforating Ulcers of Stomach and Duodenum," April 30, before the Pottawattamie County Medical Society.——Dr. Charles R. Russell, Keosauqua, read a paper on "The Problems of Small Town Physicians," and Dr. Charles N. Stephenson, Milton, on "Organized Medicine," before the Van Buren County Medical Society, Milton, April 23.——The Woodbury County Medical Society was addressed, May 5, in Sioux City, by Dr. Walter F. Harriman, Sioux City, on "Chronic Inflammatory Changes in the Cervix and Their Association with Malignancy."——Dr. Sanford R. Gifford, Chicago, addressed the Waterloo Medical Society, April 21, on intracranial lesions. Dr. Walter A. Fansler, St. Paul, addressed physicians of Waterloo and surrounding towns, May 19, on rectal diseases.——Dr. Arthur E. Hertzler, Kansas City, Mo., read a paper on "Recent Studies in the Pathology of the Genito-Urinary System" before the Des Moines Academy of Medicine and the Polk County Medical Society, June 30, in Des Moines.——Dr. Ernest M. Hammes, St. Paul, addressed the Northwest Iowa Medical Society recently on "Neurological Problems" with case reports and Dr. William F. Mengert, Iowa City, "Toxins of Late Pregnancy."——Dr. Jesse Carl Painter, Dubuque, among others, gave an address on "Fundamentals in the Surgical Treatment of Pulmonary Tuberculosis" before the Jackson County Medical Society, Bellevue, June 18, when the Clinton and Dubuque county societies were guests. Charles L. Veach, D.D.S., Bellevue, read a paper on "Malnutrition in Childhood from a Dental Standpoint."

KENTUCKY

Personal.—Dr. Allen F. Murphy, formerly of Beckley, W. Va., and recently health officer of Lee County (THE JOURNAL, June 20, p. 2130), has recently been appointed health director of Mason County, succeeding Dr. James H. Hutchings.

New District Society.—Physicians of Jefferson, Carroll, Trimble, Gallatin, Owen and Henry counties organized the Fifth District Medical Society at a meeting in Warsaw, May 14. Dr. William E. Gardner, Louisville, is councilor for the district. Meetings will be held twice a year in Carrollton. Dr. Chauncey W. Dowden, Louisville, presented a paper on diseases of the gallbladder at the first meeting.

Physicians' Exchange at Owensboro.—The opening of a physicians' exchange, to be located in a drug store, has been announced by Owensboro physicians. When physicians cannot be located through their home or office telephone numbers, they have agreed to leave at the exchange information as to where they can be reached. The plan is for physicians to list the exchange number in the telephone directory after their home and office numbers.

Society News.—The medical societies of Graves, Hickman, Fulton and Calloway counties held a joint meeting, June 18, in Mayfield. Among the speakers were Drs. Edwin A. Stevens, Mayfield, "General Practitioner—Surgeon—Patient, Their Relationship"; William T. Dowdall, Paducah, "Anesthetist—Surgeon—Patient, Their Relationship"; Arthur T. McCormack, Louisville, "The Doctor and Community."—Dr. Arthur T. McCormack, Louisville, director of the state department of health, among others, spoke on "Responsibilities of County Health Officers" before the Kentucky Valley Public Health Association, June 20, in Lexington, and Dr. John S. Chambers, Lexington, on "The Evolution of Public Health." The next quarterly meeting will be in Pineville, Sept. 5.——Dr. Waller S. Leathers, Nashville, Tenn., spoke on "Significant Achievements in the Field of Preventive Medicine" before the Christian County Medical Society, Hopkinsville, June 16, and Dr. Arthur T. McCormack, Louisville, on "Public Health in Kentucky."——The Third District Medical Society and the Warren County Medical Society held a joint meeting, June 17, in Bowling Green. Speakers were Drs. Walter F. Boggess, Louisville, on "A Medical Viewpoint on Some of the Disturbances of the Hepatic and Biliary Systems"; Guthrie Y. Graves, Bowling Green, "The Chronically Infected Gallbladder" and Wallace Frank, Louisville, "Surgery of the Gallbladder."

MARYLAND

State Licenses Canneries.—Inspections of canneries by the state board of health under a new law requiring such plants to be licensed are now in progress. Attention is being given especially to those packing early vegetables, such as beans and peas, and a number have been licensed. After Jan. 1, 1932, new canneries cannot be licensed unless they are so located and constructed that waste liquids, drainage and inedible products can be readily removed or stored or destroyed without constituting a menace or objectionable, unsanitary conditions.

MASSACHUSETTS

Personal.—Dr. George M. Kline, Beverly, commissioner of the Massachusetts department of mental diseases, received the honorary degree of master of arts from the University of Michigan at commencement, June 22.——Dr. Harvey Cushing, Moseley professor of surgery, Harvard University Medical School, received the honorary degree of doctor of science from the university at the June commencement.

Licenses Suspended.—At a special meeting, April 2, the board of registration in medicine voted to suspend the licenses of Drs. Edward J. Flaherty, Maynard, and Irving F. Armstrong, Hudson, as a result of their conviction in the Middlesex Superior Court on charges of conspiracy to defraud insurance companies. Dr. Armstrong was sentenced to serve fifteen months in the house of correction and to pay a fine of $500. Dr. Flaherty was sentenced to serve nine months in the house of correction, beginning March 20, but was paroled June 23. He was ordered to pay a fine of $250.

MICHIGAN

Four-County Health Unit.—Lake County will join the health unit being organized by Newaygo, Osceola and Oceana Counties, the Lake County supervisors announced, June 23. The unit will cost $26,000 a year, of which $21,000 will be supplied by the Couzens Fund, the Rockefeller Foundation and the national and state governments, and the remaining $5,000 will be raised by the counties. The unit will consist of four full time employees, a physician, a nurse, a sanitary inspector and a dentist. Officials expect to have it in operation by early fall.

Scarlet Fever Regulations Changed.—The Detroit department of health has made changes in the scarlet fever regulations, applying to cases without complications and to patients over 15 years old. It has been noted, the report says, that cases among contacts rarely occur when patients are over 15 years old, and that cases among contacts rarely occur during the summer months. Patients over 15 who have had uncomplicated cases will be released from quarantine after three weeks; and during July, August and September, all patients with uncomplicated cases will be released at the end of three weeks. No patient may be released until his recovery has been reported by his physician to the division of communicable diseases and until the quarantine area has been cleansed. Children may not return to school for one week after release.

MINNESOTA

Society News.—The Minnesota Hospital Association, the Minnesota Sanatorium Association and the Minnesota State Tuberculosis Association held their seventh annual joint convention, June 22, in Duluth and continued, June 23-24, in Lutsen. Dr. Fred G. Carter, superintendent of the Ancker Hospital, St. Paul, was elected president of the Minnesota Hospital Association, and Dr. Frank L. Jennings, Glen Lake Sanatorium, Oak Terrace, was elected president of the Minnesota Sanatorium Association.——Dr. Frederick A. Willius, Rochester, gave a lecture on heart disease before the Redwood-Brown County Medical Society, May 19, in New Ulm.——Among speakers before the Southwestern Minnesota Medical Society, Luverne, May 11, was Dr. Charles Sherman, Luverne, on "Medical Economics."——Dr. Alfred E. Belitz, Pepin, Wis., spoke on "Tuberculous Salpingitis" before the Wabasha County Medical Society, July 9, in Lake City.——The Washington County Medical Society was addressed, May 12, by Dr. Joseph F. Borg, St. Paul, on arteriosclerosis and arteriolosclerosis.

MISSOURI

New County Hospital.—Dr. Eugene A. Scharff, former superintendent of St. Louis City Hospital, will be chief of staff of the new St. Louis County Hospital, which will be dedicated, July 18. The initial capacity is 150 beds and 48 bassinets, of which 50 beds and 24 bassinets are for Negroes. No provision has been made for tuberculous, contagious, mental, chronic or infirmary cases, which are handled at other institutions. The kitchen and other service departments have been constructed with a view to serving an additional 150 beds. The hospital was constructed at a cost of $1,000,000.

Monthly Clinic.—The July clinic of the Kansas City Southwest Clinical Society was held at St. Mary's Hospital, Kansas City, July 14, in cooperation with the medical societies of Jackson and Wyandotte counties. Guest clinicians were Drs. Clarence W. Hopkins, Chicago, who conducted a clinic on head injuries; Oliver B. Zeinert, St. Louis, injuries to the chest, and Ross A. Woolsey, St. Louis, injuries to the spine. Operative clinics in general surgery, urology, ophthalmology and otolaryngology and ward walks for observation of medical cases were conducted by sixteen Kansas City physicians. Dr. Morris B. Simpson, Kansas City, was local chairman.

NEBRASKA

Personal.—Dr. John E. Summers, Omaha, recently observed the fiftieth anniversary of his graduation from the Columbia University College of Physicians and Surgeons, New York.——Dr. Floyd A. Alcorn, Haxtun, Colo., has been appointed superintendent of the State Orthopedic Hospital, Lincoln.——Dr. Nora M. Fairchild, Omaha, who is on an extended trip to Europe, has been invited to take charge of ophthalmic surgery during the coming winter at the mission hospital, Brindaban, India.——Dr. Olga F. Stastny, Omaha, received the second Noguchi medal to be awarded by Phi Delta Epsilon, Creighton University College of Medicine, May 14. Dr. Stastny received a citation from the Czechoslovakian government for work in hygiene and medical social service. As medical director of a Near East relief station, Loutrakie, she received the Cross of St. George from the Greek government.

Society News.—Drs. Abraham S. Rubnitz and Frederick W. Niehaus addressed the Omaha-Douglas County Medical Society, April 28, on electrocardiography, and Dr. Frank M. Conlin on "Treatment of Pernicious Anemia with Desiccated Hog Stomach."——Speakers at a meeting of the Seward County Medical Society, May 28, were Drs. Joseph Morrow, on medical legislation; Herschel B. Cummins, colitis, and Bert E. Morrow, Seward, use of Normet's citrated solution.——Among the speakers before the Cedar, Dixon, Dakota, Thurston and Wayne Counties Medical Society annual meeting and picnic, Emerson, June 26, were Drs. Charles R. Kennedy, Omaha, on "Urological Diagnosis and Treatment," and John Buis, Pender, "Agranulocytic Angina."——The Madison Five Counties Medical Society met, May 26, in Newman Grove. Among the speakers in a symposium on goiter were Drs. George H. Morris, Newman Grove, Clyde A. Roeder and Rodney W. Bliss, Omaha.——A symposium on vitamins was presented by Drs. Frank A. Nelson, Humboldt; George W. Egermayer, Shubert, and Oscar F. Lang, Falls City, before the Richardson County Medical Society, Humboldt, May 20.——Among the speakers who addressed the Custer County Medical Society, Broken Bow, May 27, was Dr. Francis W. Heagey, Omaha, on cardiography.——A symposium on obstetrics was given before the medical societies of Fillmore and Saline counties, Friend, June 9, including discussions of prenatal care, anesthesia, puerperal sepsis, eclampsia, hemorrhage and breech presentation. Speakers were Drs. V. V. Smrha, Milligan, Harry J. Wertman, Milford, Joseph Bixby, Geneva, William Sandusky, Seward, Frank T. Hamilton and Rodney K. Johnson, Friend.

NEW HAMPSHIRE

Diphtheria Immunization Campaign.—A state-wide diphtheria immunization campaign was recently carried out by the state board of health, through its division of maternity, infancy and child hygiene. Clinics were held in thirty communities, of which twenty-three were new and seven repeat clinics. Approximately 2,600 children under 12 years received the complete immunization treatment, with no serious reaction or illness being reported. Dr. Charles A. Weaver, epidemiologist of the state board of health, gave treatments in communities where local physicians were not available for the work.

NEW JERSEY

Society News.—Dr. Reuben Ottenberg, New York, among others, spoke on "Diseases of the Liver and Their Treatment" before the Bergen County Medical Society recently at Bergen Pines.——A new county hospital for mental diseases, with accommodations for 500 patients, was opened recently at Hillsdale, Holmdel, Monmouth County.

State Medical Election.—Dr. John F. Hagerty, Newark, was made president of the Medical Society of New Jersey at its meeting in Asbury Park, June 3-5. Other officers named were Drs. Paul M. Mecray, Camden, Frederick J. Quigley,

Union City, and Lancelot Ely, Somerville, vice presidents; John B. Morrison, Newark, secretary, reelected, and Elias J. Marsh, Paterson, treasurer.

NEW YORK

Society News.—Dr. George E. Bennett, Baltimore, spoke on "Stiff and Painful Shoulders" and Dr. Sydney R. Miller, Baltimore, on "Blood Stream Infections and Their Therapy," before the Broome County Medical Society, May 23.——Dr. Thomas P. Farmer, Syracuse, among others, gave an illustrated lecture on "Cancer of the Female Generative Organs" before the Greene County Medical Society, Catskill, May 18.——The Allegany County Medical Society was addressed, May 28, by Drs. Douglas P. Arnold, Buffalo, on "Gastro-Intestinal Disorders in Childhood" and Jacob Paul Rems, Belmont, on "Precordial Pain."——Dr. Frederick S. Wetherell, Syracuse, read a paper on "Diseases of the Thyroid Gland" before the Medical Society of Lewis County, Denmark, May 12.

New York City

Personal.—Dr. John M. Wheeler, professor of ophthalmology in the Columbia University College of Physicians and Surgeons, was recently appointed to the board of directors of the National Society for the Prevention of Blindness.——Dr. James Ramsay Hunt, professor of clinical neurology at Columbia University, received the title of professor of neurology, effective, July 1.——Dr. David Bryson Delavan was awarded the De Roaldes gold medal of the American Laryngological Association at its meeting, June 16, in Atlantic City, in recognition of his contributions to laryngology and his fiftieth anniversary as a fellow of the association.

Directors Appointed for Bureau of Child Guidance.—Leon W. Goldrich, Ph.D., educator and social welfare worker, has been appointed director, and Dr. Francis J. O'Brien, director of the Louisville (Ky.) Psychiatric Clinic, is to be assistant director of the bureau of child guidance which will be instituted with the opening of the fall term in the public schools of New York (THE JOURNAL, Dec. 27, 1930, p. 1981). The staff of the bureau will include in addition to these officers an investigating social case worker, two pediatricians, a psychologist, two psychiatric social workers, a district superintendent and the necessary assistants. In addition to psychologic and psychiatric tests, each child will receive a thorough medical examination by the staff pediatricians, who will recommend medical treatment to be carried out by the family physician. The purpose of the bureau is expressed thus: "To develop and restore the emotional balance and to integrate the personality of emotionally disturbed and unadjusted children in the public schools of the city of New York."

Gifts for Research.—New York University has recently received gifts and bequests amounting to $258,793, Treasurer William M. Kingsley announced, June 27. Many gifts for medical research are included. Following is the list: Altman Foundation, for research in pneumonia, under the direction of Drs. William H. Park, Jesse G. M. Bullowa and Milton B. Rosenbluth, $4,450; Mrs. Huguette Clark, for the current expenses of the department of dermatology, $3,000; International Committee for the Study of Infantile Paralysis, for study of infantile paralysis in cooperation wth the committee, $2,500; The Hartley Corporation, for the department of therapeutics for 1931-1932, $2,500; Josiah Macy, Jr., Foundation for the Neurological Research Laboratory Fund for Migraine, $2,500; Mrs. Frances Neilson, through Dr. Charles Hendee Smith, for the department of pediatrics for x-ray work, $1,800; sundry donors, through Dr. Smith, for the current expenses of the department of pediatrics, $1,725; White Laboratories, Inc., for a fellowship for clinical work in connection with the use of liver extract in pernicious anemia, $1,250; sundry donors, through Dr. William J. Pulley, toward the expenses of the children's clinic, $1,064.30; sundry donors, many through Mrs. Frances E. Storer, for the cardiac clinic fund, $1,045; Lederle Laboratories, Inc., for experimental work on liver extract under the direction of Dr. John H. Wyckoff, Jr., $1,037.50; National Tuberculosis Association, for a scholarship for the study of health conditions in Harlem, School of Education, $750.

OHIO

Society News.—Dr. Fred W. Lane, Cambridge, read a paper on state medicine before the Guernsey County Medical Society, Cambridge, July 2.

Personal.—Dr. Homer M. Austin, chief of the division of hygiene of the state department of health since 1929, resigned, July 1, to become assistant superintendent of the Clark County Tuberculosis Hospital, Springfield.

Lima-Allen County Graduate Course.—Dr. Thomas McCrae, Magee professor of practice of medicine and clinical medicine in Jefferson Medical College, Philadelphia, will give the annual postgraduate course of the Academy of Medicine of Lima and Allen County, September 8-12, in Lima. Following are his subjects: "Methods of Diagnosis," "Organic Change Versus Disturbance of Function," "Classification of Nephritis," "Rheumatic Fever," "Diagnosis of Arthritis," "Sir William Osler," "New Growths of the Bronchi," "Use of Digitalis," "General Discussion of Syphilis" and "Endocrinology."

Student Prizes.—Western Reserve University School of Medicine, Cleveland, awarded the senior prize in obstetrics to Edward Payson Judd, Cleveland, June 18. The prize, given to the senior who shows the best knowledge of the subject, is an award in income from a gift made several years ago by Dr. Edwin C. Garvin, Cleveland. Yasha A. Venar, a sophomore in the school of medicine, received the Herbert A. Steuer Memorial award for outstanding research work in the department of anatomy. The cash award was given for his work entitled "Study of Skeleton Weights and Densities of Full-Termed and Premature Children. Suggested Index Assessment of Maturity by X-Ray Plates." The memorial fund was created by friends of the late Dr. Steuer, senior demonstrator in anatomy at Western Reserve University, after his death in 1929.

RHODE ISLAND

State Medical Meeting and Election.—Dr. Harry L. Barnes, Wallum Lake, was installed as president of the Rhode Island Medical Society at its recent annual meeting, and Dr. Norman D. Harvey, Providence, was made president-elect. Dr. James W. Leech, Providence, was reelected secretary. The next annual session will be held in Providence, June 2, 1932. Papers were presented by Drs. Frank E. McEvoy, Providence, on "Diagnosis of Hyperthyroidism"; John F. Kenney, Pawtucket, "Recent Studies in the Etiology of Appendicitis"; Carl D. Sawyer, Providence, "Epidermophytosis, or So-Called Athlete's Foot"; Dennett L. Richardson, Providence, "Four Hundred Cases of Erysipelas"; Harry L. Barnes, Wallum Lake, "Cutting of Pleural Adhesions in Pneumothorax Treatment of Tuberculosis"; and Guy W. Wells, Providence, "Basal Metabolism in Normal Young Women." The address of the retiring president, Dr. Julian A. Chase, Pawtucket, concerned periodic health examinations by the family physician.

TENNESSEE

Personal.—Dr. Austin F. Barr, Pulaski, director of the health unit of Giles County since its establishment two years ago, resigned, June 6.——Dr. Samuel Shaw Moody, Johnson City, has resigned as health officer of Washington County and Dr. Wallace L. Poole has been appointed to succeed him.——Dr. Waller S. Leathers, dean and professor of preventive medicine and public health, Vanderbilt University School of Medicine, Nashville, was reelected president of the National Board of Medical Examiners at a recent meeting in Philadelphia.

Society News.—Dr. Charles E. Homan, Jr., and Dr. Hiram A. Laws, Jr., Chattanooga, spoke on "Spastic Colon" and "Surgical Conditions of the Gallbladder," respectively, before the Chattanooga and Hamilton County Medical Society, June 4. The society was addressed, June 11, by Drs. William E. Bryan on "Diseases of the Coronary Vessels" and Earl R. Campbell, "Use of Unna's Boot in Pathological Conditions."——Dr. Edward Clay Mitchell, Memphis, addressed the Dyer, Lake and Crockett County Medical Society, May 8, on care of the preschool child.——Dr. Walter A. Ruch, Memphis, among others, spoke on "Present Status of the Treatment of the Toxemias of Pregnancy," May 26, before the Hardin, Lawrence, Lewis, Perry and Wayne Counties Medical Society, and Dr. Samuel T. Parker, Jackson, on "Chronic Purulent Otitis Media."——The second of four joint medical meetings of McMinn, Monroe, Roane and Loudon counties was held, June 30, in Sweetwater. Among the speakers were Drs. William D. Padget, Lenoir City, on "Pellagra"; Thomas M. Roberts, Sweetwater, "What Is Left for the General Practitioner"; Carey O. Foree, Athens, "Undulant Fever"; Andrew L. Rule, Knoxville, "Intrathoracic Conditions"; Thomas H. Phillips, Rockwood, "Pyelitis."——Drs. George K. Carpenter and Murray B. Davis, Nashville, spoke on "Family Spastic Paralysis" and "Gunshot Wounds of the Thorax," respectively, before the Robertson County Medical Society, June 15, at Watauga Sanitarium, Ridgetop.——Dr. Sanford E. Gaines, Sparta, was elected president of the Upper Cumberland Medical Society at its thirty-seventh annual meeting recently in Red Boiling Springs.

TEXAS

Changes in Medical Board.—Recent appointments to the state board of medical examiners make the personnel as follows: Dr. Neil D. Buie, Marlin, Dr. Thomas J. Crowe, Dallas, Phil R. Russell, D.O., Fort Worth, and Dr. Joseph D. Becton, Greenville, all appointed for six years; Drs. Herman H. Blankmeyer, Aransas Pass, Isaac A. Withers, Fort Worth, E. Marvin Bailey, Houston, and Hatch W. Cummings, Hearne, appointed for four years; and Drs. Marquis E. Daniel, Honey Grove, James M. Witt, Waco, Horace C. Morrow, Austin, and Herschel F. Connally, Waco, appointed for two years. Dr. Connally was appointed as the twelfth member under a new law providing for an increase in the board.

VIRGINIA

University News.—A grant of $2,000 a year for three years has been made to the Medical College of Virginia, Richmond, by the Valentine Meat Juice Company, for the purpose of cooperative research in the basic sciences as related to medicine, dentistry, pharmacy and nursing. The work will be done jointly by various departments of the college, the president announced.

Personal.—Dr. John Shelton Horsley, Richmond, was awarded the honorary degree of doctor of laws by the University of Richmond at its commencement recently. Dr. Charles Armistead Blanton, Richmond, received the same honor from Hampden-Sydney College.——Dr. Allen Fiske Voshell, associate professor of orthopedic surgery, University of Virginia Department of Medicine, has been appointed professor of orthopedics in the Medical School of the University of Maryland. ——Dr. Lawrence T. Royster, University, has been reappointed as a member of the Virginia State Board of Health for seven years.

Dr. Draper Appointed State Health Officer.—Dr. Warren Fales Draper, assistant surgeon general of the U. S. Public Health Service, has been appointed health officer of Virginia pending the appointment of a permanent successor to the late Dr. Ennion G. Williams. By special permission from the Treasury Department, Dr. Draper will be given a leave of absence from the federal service. Dr. Draper was graduated from Harvard University Medical School in 1910, when he entered the U. S. Public Health Service. Since 1922 he has been assistant surgeon general in charge of the division of domestic quarantine. During the World War he directed sanitary work at Camp Lee, Petersburg, and at Newport News.

Faculty Changes.—The Medical College of Virginia has announced the addition of fifteen members to the faculty, and the promotion of three physicians to professorships. Dr. Hugh C. Henry has been made associate in nervous and mental diseases. New assistants are:

Dr. A. H. Bell, surgery.
Dr. Alexander N. Chaffin, surgery.
Dr. W. A. Farmer, surgery.
Dr. Theodore Kohn, medicine.
Miss Alice Loehr, biochemistry.
Dr. Edward H. Williams, pediatrics.

The new staff of instructors includes:

Dr. Clifford H. Beach, first aid.
Dr. Meade S. Brent, nervous and mental diseases.
Dr. John R. Gill, nervous and mental diseases.
Dr. J. B. Graham, surgery.
Dr. Randolph Hoge, surgery.
Dr. Rudolph Angus Nichols, Jr., surgery.
Dr. Herman M. Richardson, gynecology.
Dr. James N. Williams, nervous and mental diseases.

Promoted to professorships are Drs. Benjamin H. Gray, clinical obstetrics; William H. Higgins and James H. Smith, clinical medicine.

WISCONSIN

Hospital News.—The new Wisconsin Orthopedic Hospital, on the University of Wisconsin campus, Madison, was opened recently. Ninety-eight children were moved from Wisconsin General Hospital to the new structure. Dr. Robin C. Buerki is director.

Personal.—Dr. Phillips F. Greene, associate professor of surgery in the University of Wisconsin School of Medicine, will go to China in August to be head of the surgical unit in the Yale University Hospital, Changsha, Hunan, where he was previously located.——Dr. Paul L. Eisele was recently appointed health officer of Ripon.——Dr. John E. Guy, Milwaukee, was elected president of the state board of medical examiners, July 2, succeeding E. C. Murphy, D.O. Dr. Robert E. Flynn, LaCrosse, was reelected secretary.

New Building for Marquette.—Plans for a new $500,000 building for the Marquette University School of Medicine have been announced by the university. Construction will begin in August and it is anticipated that the building will be ready for use in the fall of 1932. The five-story building of Gothic design will occupy a double block on the university campus, adjoining the dental school and will accommodate 375 students. A museum of pathology, a museum of anatomy, an art room, an x-ray department and the student health service are among the features planned in addition to ample provision for administration, class and laboratory work.

Society News.—Dr. George F. Woodruff, Joliet, Ill., spoke on acute mastoiditis before the Rock County Medical Society, Janesville, June 30.——The Wood County Medical Society was addressed, June 25, in Marshfield, by Drs. K. H. Doege and Lyman A. Copps, Marshfield, on "Some Aspects of Acute Rheumatic Fever" and "Complications of Middle Ear Infection," respectively, and by Dr. John W. Harris, Madison, on "Recent Advances in Clinical Obstetrics and Gynecology."—— Dr. Cornelius A. Harper, Madison, among others, spoke on "Some Phases of Social Medicine" before the annual meeting of the fifth district of the Wisconsin State Medical Society, June 25, at Elkhart Lake, and Dr. Arthur J. Cramp, Chicago, on "Pink Pills for Pale People."——Three Madison physicians addressed the annual meeting of the Green County Medical Society, Monroe, June 18: Drs. Arnold S. Jackson on "Spinal Anesthesia"; James A. Jackson, Jr., "Habitual Dislocation of the Shoulder," and Carroll Kenneth Cook, "Treatment of Burns."——The Grant County Medical Society was addressed in Lancaster, June 18, among others, by Drs. Reginald H. Jackson, on "Gallbladder Diseases" and Elmer L. Sevringhaus, "Diabetic Patients."

CANADA

Personal.—Dr. Hugh Edwin Munroe, Regina, Sask., lately appointed lieutenant governor of Saskatchewan, has dropped his medical practice to assume his new duties.

Graduate Course in Medicine.—There will be no fee charged for the graduate course in medicine which will be held at St. Michael's Hospital, Toronto, September 14-19. All visitors will be welcome. The object of the course is to keep general practitioners in touch with the advances in medical science. The majority of the lecturers and clinicians are associated with the University of Toronto Faculty of Medicine. Further information concerning this course may be received from Dr. William B. Edmonds, Medical Arts Building, Toronto.

Royal Commission to Investigate Cancer.—A commission appointed by the provincial government of Ontario to study methods of treatment for cancer is at present making an extensive tour of the United States, Canada and European countries. The commission has visited institutions working in the field of cancer in Buffalo, Boston, New York, Philadelphia and Baltimore and sailed, June 26, to observe similar centers in Great Britain and on the continent. Members of the commission are the Rev. H. J. Cody, chairman of the board of governors, University of Toronto, and chairman of the commission; Prof. J. C. McLennan, University of Toronto; Dr. Walter T. Connell, Queen's University; Arthur Ford, Esq., London, Ont.; Dr. John W. S. McCullough and Dr. John M. Robb, chief inspector of health and minister of health, respectively.

Society News.—Dr. Charles W. Prowd was elected president of the Vancouver Medical Association at its annual meeting, April 28, in Vancouver, B. C. Other officers are Drs. Edward Murray Blair, vice president; Lyon H. Appleby, secretary; William T. Lockhart, treasurer.——Dr. Norman L. Terwillegar addressed the Edmonton Academy of Medicine, May 6, on injection treatment of varicose veins, and Dr. Robert Graham Huckell on examination of the back.——Dr. John G. Fitzgerald, Toronto, Ont., among others, spoke on "Health Activities of the League of Nations," and Dr. Gordon E. Richards, Toronto, spoke on "Cancer of the Breast," before the Ontario Medical Association annual meeting recently at Niagara Falls. Dr. William Philp, Hamilton, 94, retired, was guest of honor at the luncheon; he was made a life member of the association, as were Drs. William M. Mather, Tweed, Ont., and Joseph H. Radford, Galt, Ont.

Immunization Campaign Among Toronto School Children.—The department of public health of Toronto offered immunization against diphtheria by the use of "toxoid" (anatoxine-Ramon) to the school children of the city from December, 1926, to June, 1929. A systematized record was kept of all notifications of diphtheria cases together with tallies when the immunization was given. Among 36,189 school children passing through the hands of the toxoid team, 8,980 received no toxoid, 1,386 received one dose, 8,994 received two doses, and 16,829 received three doses. The diphtheria rate, during the observation period of two and a half years during the campaign and fourteen months following completion of the campaign was about 25 per cent of the rate in children

who did not pass through the records of the team. Among the 120 cases that did occur subsequent to coming under observation of the toxoid team, twenty-two were in the group of children who were given no toxoid and twelve occurred within one month of receiving the first dose of toxoid, four within one month of the second dose. In the 120 cases the case fatality was definitely less than in the cases occurring in the balance of the school population. This 75 per cent reduction in cases and 80 per cent reduction in deaths in the whole group (with about 90 per cent reduction in cases with no deaths in those given three doses of toxoid) is said to have been obtained without producing one severe reaction.

GENERAL

Examination in Otolaryngology.—The American Board of Otolaryngology held an examination, May 27, in Los Angeles, in which sixty-two of the seventy-seven candidates passed. In an examination, June 8, in Philadelphia, ninety of the ninety-eight candidates passed. The board will hold another examination, September 12, in Indianapolis, preceding the meeting of the American Academy of Ophthalmology and Otolaryngology, September 14-19, at French Lick, Ind. Application blanks may be obtained from Dr. William P. Wherry, 1500 Medical Arts Building, Omaha, Neb.

Health Examinations for Workers on Dam.—Medical tests for men working on Hoover Dam, in Boulder Canyon, Nevada, have been ordered by the government, according to the New York *Times*. Many laborers have been recruited from a large camp of unemployed who established themselves at the site of the dam in the prospect of employment. Many of these persons have been living so scantily that they are not in physical condition to do the arduous construction work. Aside from the possible direct effects of the intense heat of the desert country, it is believed that the heat will lead to a high accident rate among men not accustomed to the hot climate.

Heat Wave Raises Death Rates.—The effect of the recent heat wave from the point of view of mortality is indicated in telegraphic reports to the U. S. Department of Commerce from eighty-two cities with a total population of 36 million for the week ended July 4. Seventeen cities show an unusually high death rate. These reports indicate that the highest general mortality rate appears for Peoria, Ill., 28.4; the rate for the group of cities as a whole was 12.5. The mortality rate for Peoria for the corresponding period last year was 6.4 and for the group of cities, 10. The annual rate for the eighty-two cities is 12.9 for the twenty-seven weeks of 1931 as against a rate of 12.7 for the corresponding weeks of 1930.

Another Way to Rob Physicians.—Hospitals in Danville, Va., and Greensboro, N. C., have reported a new method by which several physicians have been robbed. At Danville a man presented himself at hospitals and asked what physician was operating. He then said he was a physician himself and an intimate friend of the doctor named, whereupon unsuspecting attendants showed him to the dressing room near the operating room. After ransacking the doctor's clothing, he disappeared. The chief of police at Danville reported that similar complaints had been received from other places. In Greensboro a man believed to be the same impostor posed as a hospital inspector, but when asked for his credentials he departed. The man was said to be well dressed, well educated and speaks intimately of well known physicians. He is tall and slender, with light hair and a tendency to baldness.

Society News.—Dr. Charles H. Mayo, Rochester, Minn., was elected president of the American Surgical Association, July 1, at its annual convention in San Francisco. Dr. Alexander Primrose, Toronto, is the retiring president. New Haven, Conn., was chosen as the 1932 convention city.——At the invitation of the National Committee on Mental Hygiene, a group of twenty-three psychiatrists met recently in New York to discuss college problems in mental hygiene. Among the institutions represented were Yale, Harvard, Bryn Mawr, Brown, Columbia, Chicago, Dartmouth, Minnesota, Elmira, Wellesley, Union Theological Seminary and the Montclair Normal College for Teachers. How a mental health service can assist in the selection of applicants and in the maintenance of student discipline was discussed. A similar conference will be held in 1932.——The American College of Surgeons will meet, October 12-15, in New York.——The American Protestant Hospital Association will meet, September 25-28, in Toronto.——Dr. Walter F. Hoffman, Seattle, was elected president of the Pacific Coast Oto-Ophthalmological Society at its meeting, May 28-30, in Los Angeles. The society will meet in Seattle in 1932.——The American Occupational Therapy Association will hold its next meeting, September 28-October 2, in Toronto.——The American Hospital Association will meet, September 28-October 2, in Toronto.

Progress in Saving Sight.—Various avenues of approach to the problem of saving sight are discussed in the annual report of the National Society for the Prevention of Blindness. A study made during the year by the society in cooperation with the State and Provincial Health Authorities of North America indicated that fifty-three of the sixty-one states, territories and provinces require the use of a prophylactic in the eyes of babies at birth. Only five states and provinces have no laws or regulations making ophthalmia neonatorum reportable. Reporting is far from complete, however, the report points out. Demonstrations of eye testing for preschool children were conducted by the society in seventy-one cities and ten states. Sixteen new sight-saving classes for school children have been added to the 350 already in operation in the United States. Four universities have given teacher training courses for these classes. A special report on sight-saving classes was made for the White House Conference on Child Health and Protection. A study of conservation of vision in industry, involving the experience of 583 plants, was finished in 1930 in cooperation with the National Safety Council. The society has also participated in research and demonstration projects on glaucoma and trachoma and has encouraged the development of social service in eye clinics. Public education through publications, exhibits, lectures, films and newspaper publicity has been extensive and is considered proof of growing interest in the work of the society.

LATIN AMERICA

Maternity Center in Santa Rosa.—In accordance with a plan whereby the National Bureau of Hygiene has secured the cooperation of local institutions in its work of organizing public health and hygiene services in the territories of the republic, a maternity and child health center will be established in Santa Rosa, Argentina. The proposed center will include a prenatal consultation clinic, a maternity and convalescent ward, a small children's hospital to which children will be admitted alone or with their mothers as the case may require, a home for abandoned children, child care classes for mothers and girls, and a dental clinic. The administration of the center will be under direction of the bureau, assisted by the Women's Committee of the Child Welfare Board of the city and certain municipal physicians, dentists and nurses.

Rat Plague Conquered.—Drs. John D. Long and Clifford R. Eskey, U. S. Public Health Service, have recently completed a campaign against rats instituted in Ecuador and Peru by the Pan-American Sanitary Commission, in an attempt to eliminate bubonic and pneumonic plague. Peru has suffered from the plague for thirty years, the incidence sometimes being as high as 1,800 cases in a year with 40 per cent fatal. The cases have dwindled from seventy-eight in December, 1930, to two in May, 1931. Drs. Long and Eskey concocted a rat poison containing 18 per cent arsenic mixed with cheese, ground salt fish, seal cake, dried shrimp and wheat flour, which was not attractive to any animals or insects except rats, mice and cockroaches; consequently no domestic or useful animals were lost by poisoning. The cost of the campaign was 158,457 soles ($44,000), or 1 cent per rat, so that the campaign was considered worth while from the economic standpoint alone, aside from its health value. Dr. Mostajo, a Peruvian physician, represented his government in the campaign. Argentina and Uruguay expect to begin similar campaigns in July and August.

FOREIGN

Society News.—A congress for studies on population will meet at Rome, September 7-10, to discuss some important problems related to the diminution of the birth rate.

Course in Tropical Medicine.—A special clinical course in tropical medicine has just been given at the Hospital for Tropical Diseases in London and will be repeated, October 5-23. Laboratory demonstrations in clinical pathology will be given three mornings a week by Dr. N. Hamilton Fairley. Lectures are scheduled for the afternoons by such authorities as Sir Leonard Rogers, Dr. Philip Manson-Bahr, Dr. George Carmichael Low, Dr. John M. H. MacLeod, Sir Thomas J. Carey Evans, Mr. Thomas P. Kilner and Dr. Fairley. Subjects to be covered are dysentery, sprue, plague, malaria, helminthiasis, cholera, skin diseases, leishmaniasis, trypanosomiasis, filariasis, leprosy, blackwater fever and the surgical aspects of tropical diseases.

CORRECTION

Studies in Thrombo-Angiitis Obliterans.—In the article by Silbert and Friedlander (THE JOURNAL, July 4) the metric equivalent of the dosage of thyroid extract at the top of page 17 should have read "from 0.065 to 0.13 Gm."

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 20, 1931.

Address by Calmette on Immunization with B C G

At a meeting of the Section for the Study of Diseases in Children of the Royal Society of Medicine, Prof. Albert Calmette delivered an address on the immunization of infants with his vaccine, B C G. He knew that physicians in Great Britain maintained a conservative attitude toward its use, but he hoped to convince his hearers that they could suppress the mortality due to tuberculosis among children by a safe protective measure. Most people were spontaneously vaccinated against tuberculosis in early life by small doses of infection. Children might receive the bacillus in the mother's milk, in food, or in dust infected by sufferers from the active disease. Fortunately, these repeated infections were usually small and occurred at such long intervals as to permit the development of resistance, so that the child underwent a process of auto-vaccination. The aim of Calmette and his veterinary colleague Guérin was to secure, by artificial means, this sort of immunity. For the purpose, tubercle bacilli killed by heat, or bacillary extracts, were useless, since neither showed immunizing power. Nor were spontaneously attenuated cultures utilizable, because of their tendency to recover virulence. Nevertheless it was appreciated that only living bacilli would produce lasting immunity. To isolate a strain of hereditarily and fixedly avirulent bacilli, comparable with Pasteur's anthrax vaccines, Calmette and Guérin began their researches nearly thirty years ago. They began by injecting calves intravenously with attenuated cultures of the human type. Eventually by 230 passages on a highly alkaline lipoid-containing culture medium, prepared with pure ox bile, a strain was obtained which could be harmlessly inoculated into cows and induce resistance to injection of virulent tubercle bacilli. This strain is known today as B C G. Calmette stated that its perfect innocuousness had been established in the many countries in which it had been used. A few writers, including Petroff, Watson and Dreyer, had expressed doubts, but a vast amount of work in the laboratories of the world had shown that these were due to technical errors. The efficacy of B C G was shown by vaccination of a large number of children of both healthy and tuberculous parents. In them the infantile death rate from tuberculosis fell to zero and the general mortality diminished. In learning to resist B C G, the mesenteric glands possibly developed power to deal with other organisms. By May 31, 1931, in France 336,000 children had been vaccinated, and in the world there were more than a million vaccinated. No accidents had occurred. The Pasteur Institute had put B C G cultures gratuitously at the disposal of all the sanitary services of the world. Calmette hoped to see English physicians become partisans of B C G.

In proposing a vote of thanks, Dr. Robert Hutchison said that conservatism had been carried too far in England in not giving B C G a trial. They were sincerely impressed by Calmette's clear and brilliant address. However, the *British Medical Journal* in a lengthy editorial argues that no form of artificial immunization is ever likely to produce a higher degree of immunity than can be produced under the most favorable natural conditions and that Calmette's figures are fallacious.

The Hormone Test for Pregnancy

The pregnancy diagnosis station of the University of Edinburg has published its second report, for the year ended January, 1931. An important change has been introduced into the technic. A considerable percentage of the samples of urine proved to be toxic to the mice, thus preventing any report. The method of detoxication of the urine described by Zondek did not prove satisfactory, but it was found at the station that sulphosalicylic acid was effective in most cases. This acid is a protein precipitate, but it does not precipitate the gonadotropic hormones in the absence of proteins, and in their presence removes only small fractions from the solution. In all, 835 cases were dealt with in the period covered by the report. Of these, 387 gave a negative, 433 a positive and 15 a doubtful result. In 400 cases the diagnosis of the physician agreed with that of the station and in 15 differed, giving an apparent error of 3.04 per cent. In the first report it was pointed out that the Aschheim-Zondek reaction is really a test for a functional placenta or placenta derivatives. Therefore a positive reaction does not prove the presence of a fetus. It was also emphasized that a positive reaction was found in cases of retained adherent fractions of the placenta, incomplete abortion, hydatidiform mole and chorionepithelioma. Moreover, the test remains positive for a few days after parturition or abortion, whereas the presence of a degenerating placenta is not associated with excretion of gonadotropic hormones. When the fifteen apparent errors are examined from this point of view, in at least two the test is in reality correct. The real error is thus reduced to 2.41 per cent and was due to a fault of technic (use of an inadequate stock of mice). Among the apparent errors was a case of negative diagnosis in the presence of other symptoms of pregnancy. The fetus proved to be dead and was aborted shortly after the sample of urine was taken. On the other hand, a negative test was obtained in three cases in which pregnancy of the fourth to the sixth month existed and proceeded normally. The station has received samples of urine taken soon after abortion, with the query whether the abortion could be regarded as complete. As normally gonadotropic hormones seem to occur in the urine as long as nine days after complete abortion, the test cannot be of great help before that period has elapsed. Only if samples of urine are found to be positive later than nine days after abortion can it be concluded that placental tissue or derivatives thereof are still present in a functional state. It is also noteworthy that in two cases of early pregnancy and in three cases of advanced pregnancy the test proved originally negative. In two of these the test did not become positive until the sixth and seventh months, respectively. If the quantity of hormones excreted in the urine is taken as an indication of the quantity produced, then it must be concluded that, in many cases in which the secretory level is low, pregnancy ends in abortion, whereas in other cases it reaches full term.

National Health Insurance: Attempt to Stem "The Tide of Unjustified Claims"

The wastage of benefit funds of the national health insurance system continues to trouble the authorities. The ministry of health has sent a letter to the societies and a memorandum to physicians on the future administration of benefit. The societies are told that "there is room for considerable improvement in the arrangements of various societies for supervision over the claims of their members so as to secure as far as possible that, while all legitimate claims are met, no payment of benefit is made where statutory conditions are not satisfied." Investigations show that a substantial proportion of insured claim benefit who on reference to an independent referee would be found not incapable of work. This proportion is greatest in the case of married women within the child-bearing period; it is higher for married women than for spinsters and widows and for spinsters and widows than for men, though for men it is still high. It is in illnesses of short duration that the insured most commonly claim benefit after they have ceased to be incapable of work. A strikingly high proportion of young married women who claim benefit, following the four weeks after confinement, cease to draw benefit after reference. The whole results show that much of the increase in benefit expenditure during the last ten years has been due to unjustifiable claims.

Against the continued advance of the tide of these there are two main lines of defense. The first is measures to secure a proper standard in the issue of certificates, the second is the supervision of claims by the societies. The society should "apply suitable tests to determine whether the evidence of the medical certificate should be accepted."

The memorandum to physicians refers to "the failure of a not inconsiderable number to appreciate adequate certain fundamental principles of national health insurance" and points out that "payment to each claimant in a year of a single week's benefit beyond what he is entitled to would speedily bring a large proportion of societies to insolvency." The profession is urged to "promote among those in whom it is lacking a due sense of their professional responsibility in the issue of certificates." Explanations given by physicians whose statistics compare unfavorably with their colleagues are found to include the fear of losing patients, the desire to leave the duty of saying that a patient is able to work to the examining officer of the department, and the consideration that it would be difficult for the patient to find work under the prevailing conditions of employment.

An Osteopath's Attempt to Obtain an Anesthetist

The General Medical Council has issued a warning notice to physicians that, if by their presence, countenance, advice or assistance or cooperation they enable an unqualified person to play the part of a qualified one, they are liable to have their names removed from the medical register. An advertisement by an osteopath for the part time cooperation of an anesthetist, who must be a registered physician, was sent to the *British Medical Journal* and *Lancet* and, naturally, declined. Then the lay press, ever on the side of irregular practitioners, held up for sympathy osteopathy as a profession doing good work but persecuted by the tyranny of the medical profession, which is jealous of its successes. The public is regaled with a "monstrous tale of medical obscurantism" and "benighted opposition of the medical hierarchy." But, as pointed out by the *Lancet*, it is no part of the policy of medical journals to facilitate a proposed evasion of the regulation forbidding association with unqualified persons. The object of the medical register is to enable the public to distinguish qualified from unqualified practitioners, and such association would have the opposite effect.

PARIS

(From Our Regular Correspondent)

May 27, 1931.

Combined Antityphoid and Antidiphtheritic Vaccination

Médecin général Dopter, director of the health service of the ministry of war, and an eminent epidemiologist, presented recently before the Academy of Medicine an account of an experiment that he had ordered carried out in a garrison of young soldiers. Typhoid has disappeared from the French army since all recruits, before they are mustered into their regiments, have been compelled to submit to inoculation with a combined typhoid paratyphoid (A and B) vaccine. But diphtheria continues to claim its victims. Every year, a considerable number of cases develop soon after the arrival of the recruits, particularly in certain garrisons in which, in spite of thorough disinfection, the disease appears to have become endemic. The recruits, coming for the most part from the rural districts, become an easy prey to the disease, doubtless because there are numerous germ carriers among the seasoned soldiers with whom they come in contact. Mr. Dopter decided, therefore, to combine antidiphtheritic vaccination by means of the Ramon anatoxin with the regular antityphoid vaccination. Previous experiments of Ramon and Zoeller, and of L. Martin, Loiseau and Lafaille, had shown that these vaccinations when combined are by no means antagonistic but that they even appear to reinforce each other. Only subjects who gave a positive Schick reaction were given the two vaccines, the others receiving only the regular antityphoid vaccine. The anatoxin was injected in three separate doses, with first an eighteen and then a fifteen day interval. The local and the general reactions were not more marked than with the antityphoid vaccine alone. In the subjects thus vaccinated, a few mild cases of diphtheria developed during the period of the negative phase, which shows how opportune the vaccination was for them. After the third injection of anatoxin, only two very mild cases developed, after an interval of three months. The efficacy of the antityphoid vaccine administered simultaneously was no less remarkable. Not a single case of typhoid or of paratyphroid fever developed.

Sanitary Conditions in the Sahara Region

At a recent meeting of the Union des femmes de France (a benevolent organization of nurses, dating from the war period), an address was delivered by Dr. Kossovitch, who gave a survey of the numerous diseases that occur among the natives of the Sahara region. Malaria and syphilis are the most widespread. Malaria affects from 50 to 60 per cent of the population. All types of the plasmodium are encountered. Prophylaxis is difficult to carry out among the nomad population. As for the crusade against the innumerable pools of water in which the larvae of *Anopheles* breed, it is practically impossible outside of the villages and the organized oases. Kossovitch estimated that from 60 to 80 per cent of the population is affected with syphilis. It presents itself always in grave forms; but neurosyphilis is unknown. On the isle of Jerba in the Gabes Gulf, infantile syphilis (congenital) works such havoc that, at the end of two years, of 1,800 new-born children no more than from 200 to 250 are remaining. Likewise gonorrhea is widespread, especially among the Tuaregs and the inhabitants of the oases. Among the other frequent diseases, trachoma may be mentioned. Among the Tuaregs, rheumatism is common, owing to their habit of sleeping on the sand, which becomes damp during the night, and to their custom of wearing cotton garments, which do not give them the same protection that the Arabs get from their woolen clothing. Smallpox is not common, but the cases that occur are always grave. The physicians make great efforts to promote vaccination against smallpox, but it is not an easy matter in dealing with nomadic tribes, as the natives have no lists of names. Chickenpox, whooping cough, measles and scarlet fever claim many victims in the village camps, among both children and adults. Scarlet fever and diphtheria, and likewise cancer, are unknown in the oases and on the Niger. There are a few cases of lepra mutilans at Gao. Amebic dysentery and typhoid are common in some of the oases and on the Niger. Kossovitch announced also the extreme frequency of parasitic disorders: *Filaria medinensis, Ancylostoma, Ascaris, Taenia,* scabies, and mycoses of the skin and the scalp. The flea is not known, but lice are abundant. Plague does not occur, but recurrent fever is found.

Activities of the Parti Social

The Parti social de la santé publique, the membership of which is made up of hygienists and men prominent in politics, has as its president Justin Godart, formerly minister of health. Although the society was founded only last year, as was then here announced, it is already giving evidence of considerable vitality. The society institutes inquiries into the defective aspects of public health in matters that are inefficiently controlled by the official inspection services or that should receive attention at their hands. Its deliberations on observations and documents brought in by its members lead to conclusions of a critical nature, which are communicated to the press and constitute veritable denunciations of a more authoritative character and of wider and more permanent effect than the inquiries opened from time to time by a journalist unfamiliar with the subject in hand. The Parti social is tending to become a veritable vigilance committee in matters of public health administration, as affecting both public and private organizations.

Its opinions are often quoted by reason of the eminent persons in its membership, and its recommendations have often a salutary effect. For instance, the association has undertaken a campaign to bring about greater cleanliness at railway stations and in railway coaches; also in postoffices and comfort stations. The organization has also gone on record as opposing the introduction of the foreign custom of drinking cocktails; it opposes likewise overstudy in the schools, and favors prenuptial medical examinations. It has induced, for instance, the railway companies to order regular inspection, by the personnel in charge of trains, of the condition of railway coaches en route, there having been a tendency for the train personnel to rely too much on the one cleansing process at the end of the journey. Receptacles for waste are to be placed in each coach, or more especially in the coaches in which provisions are commonly consumed, and instructions to passengers will be posted to the effect that waste material must not be thrown on the floor or out of the windows. Members of the train's personnel shall have the right to impose an immediately collectible fine on travelers who disregard the posted instructions: 5 francs (20 cents) in the third-class coaches, 10 francs in the second class and 15 francs in the first class. If need be, a formal complaint may be lodged against an offender. Trains taking on passengers at health centers will be provided two days each week with special compartments, which may be reserved for patients holding a physician's certificate. These compartments will be disinfected at the end of each journey. The Parti social proposes to take part in the election campaigns and will recommend by means of posters the candidates who agree to support its recommendations if they are elected to parliament. It is possible that this association will succeed in this manner in introducing some useful reforms in public health administration.

BERLIN

(From Our Regular Correspondent)

June 1, 1931.

Dementia Paralytica

At the annual session of the Deutscher Verein für Psychiatrie, held in Breslau, April 10-11, the chief topic on the program was dementia paralytica. Jossmann of Berlin, on the basis of a carefully collected series of about 2,200 treated paralytic patients, reported on the results of malaria therapy in dementia paralytica. He divides the cases, according to the results, into four groups: (1) complete remissions, 25.4 per cent; (2) incomplete remissions, 17.3 per cent; (3) failures, 25.8 per cent, and (4) fatal issue, 33.5 per cent. He emphasizes how difficult it is in practice to apply such a classification. Neither the outcome of the intelligence test nor the determination of the capacity for work can be taken as unequivocal criteria. The prognosis depends, among other things, on the age, the general constitution, the duration and the type of the paralytic condition (manic symptoms usually of better prognosis than depressive symptoms), and on the personal adaptation capacity. Encephalography may supply some prognostic criteria, since marked changes are something of an indication that the prospects of recovery through treatment are less favorable. Jossmann called attention to the fact that preliminary syphilitic treatment increases the chances of irritation therapy being successful. The effects of irritation therapy are expressed also in a tendency of the blood and the spinal fluid to become normal.

In a second paper, Kurt Schneider of Cologne expressed his opinions on the social questions involved. Patients who have been treated for dementia paralytica should by no means be permitted, even though the remissions are recorded as complete, to take up any form of employment that would jeopardize the safety of the public. Physicians and judges in such cases approve only such forms of activity as are under the permanent supervision of normal persons. The criminality of treated and untreated paralytic patients is, to be sure, not high. Nevertheless, the suspicion of irresponsibility will continue to rest even on the paralytic patients with practically complete remissions. In contrast with the irresponsibility in a criminal sense, full recognition of business capacity may frequently be accorded to treated dementia paralytica patients. It rarely becomes necessary to deprive a patient with a remission of the right to administer his business affairs. On account of the protracted course of the disease, the relations of a patient to his or her spouse are especially difficult to determine, since the restoration of a mental union, even after many years, cannot be declared *a priori* to be impossible. Finally, as to the bearing of the disease on social hygiene: By reason of the uncertainty of the future, dementia paralytica patients, in spite of complete remissions, should be discouraged from marrying. As a rule, a pregnancy should not be interrupted; mild fever therapy may possibly be indicated. From a purely social point of view, the splendid medical triumph of the modern method of treating dementia paralytica has its dark side. The small percentage of patients who are virtually cured are, from the social point of view, by no means as important as the remaining majority on whom rests the consciousness that they are chronic paralytic patients.

F. Plaut of Munich discussed the biologic problems. The effects of fever therapy are expressed in the majority of cases by a gradual improvement in the condition of the spinal fluid. The first thing observed is disappearance of the pathologically increased lymphocytes; there follows a decrease in protein, a disappearance of the hemolysins; also a tendency for other reactions to become normal (colloid reaction, Wassermann reaction, and others). This retrogression of the pathologic manifestations of the spinal fluid is especially marked in the cases in which the prognosis is favorable. As a rule, strongly pathologic changes in the spinal fluid, persisting for a year after the conclusion of treatment, point to an unfavorable prognosis. On the other hand, if the spinal fluid clears up, that is a favorable sign. One finds, however, exceptions to both rules, which furnishes evidence that the serologic manifestations can serve as a basis for prognostic conclusions only when considered in connection with the clinical observations. Special attention should be directed to the observations of Plaut to the effect that, in the cases of dementia paralytica that after treatment show no recurrences, the improvement in the spinal fluid once begun continues to progress over a period of years, and that, after ten years of uninterrupted remission, in 94 per cent of the cases completely negative blood and spinal fluid tests were recorded.

Horn and Kauders of Vienna brought out that of especial importance for the course of the disease is the prevention of relapses. According to their observations, weight must be laid on syphilitic after-treatment. It appears to be essential also, during the first two years following malaria treatment, to prevent by means of renewed fever therapy (malaria or typhoid vaccine treatment) a relapse. It is important to begin malaria treatment early; if possible, before the outbreak of acute paralytic symptoms.

Vegetables in Children's Diet

The demand for fresh vegetables in the nutrition of young children is based chiefly on the importance of a diet rich in vitamins and the consideration that canned vegetables lose in the canning process an appreciable proportion of the vitamins and the mineral salts. The clinical conditions and the problems affecting the physiology of nutrition were discussed in detail by Professor Langstein before the Berliner medizinische Gesellschaft.

A loss of vitamins and of mineral salts may occur even when fresh vegetables are prepared in the home. If proper precautions are taken, the loss of mineral salts may be reduced to a minimum when the vegetables are prepared in the home for immediate consumption and when they are canned for later use. Vitamins are to a certain extent heat-fast and consequently

are not destroyed by the canning process; but they are more easily damaged through wrong methods of home preparation than they are by the ordinary canning process on a large scale.

The use of canned vegetables for months in the feeding of children, ordinary dietary schemes being followed, offers no difficulties and shows no injuries of any kind that might be associated with lack of vitamins or mineral salts. There is, in general, an essential difference between turnips and spinach, the vegetables used in infant feeding, since spinach remains much longer in the stomach than do turnips. A comparison of fresh vegetables and canned vegetables shows that, as a rule, the canned product accelerates gastric activity more than fresh vegetables. This is especially true if one compares a good canning spinach (an early spring product) with a fresh spinach of later growth. The stay in the stomach stands in close relation to the cellulose content of the vegetables, the time being lengthened as the cellulose is decreased. There is usually no essential difference between the formation of gastric juice in the stomach with fresh vegetables and canned vegetables. In the infant the secretion of gastric juice is less efficient in the vegetable periods than in the vegetable-free periods.

From metabolism experiments many interesting points have been learned that are of practical value in the application of the vegetable diet to the young child, and especially to the young infant, toward whom the researches were directed more particularly. The impairment of the gastric secretion is sufficient to explain the often observed resistance of the young child to the introduction of vegetables into his diet. It will be well, therefore, in the future not to force the issue and not to introduce vegetables into the diet of the child at an early period as a matter of principle but under certain circumstances not to begin with the vegetable as a side dish until the gastric juice formation is thereby no longer impaired; that is to say, in the second year of life. For the young child turnips are preferable to spinach; when the use of spinach appears desirable (namely, for transition and in times when fresh vegetables are not obtainable), one may resort to canned spinach (preferably the spring variety). It is especially important to note that canned vegetables can be utilized without any hesitation as a supplement to an infant's diet in seasons in which a good quality of fresh vegetables cannot be readily obtained.

Professor Goldscheider Honored

The clinician Prof. Alfred Goldscheider celebrated, May 20, the day on which, fifty years previously, he was graduated from the University of Berlin on the basis of the thesis "The Theory of the Specific Energy of the Organs of Sense." Goldscheider always devoted himself to the whole field of internal medicine. He perfected the method for the determination of the position and size of the heart; devised a new method for the recognition of pulmonary tuberculosis in its initial stages, studied the pathologic changes in the white and in the red corpuscles, and emphasized the need of psychologic observation in the diagnosis and treatment of disease. As a writer Goldscheider has produced many well digested works, to mention only his "Diagnosis of the Diseases of the Nervous System" and "Diseases of the Spinal Column," which he published in collaboration with his teacher. Together with Jacob, he published the "Handbook of Physical Therapy." He published also a pamphlet on the treatment of ataxia, applying and extending further movement therapy in disorders of nerves, muscles and joints, which was first introduced by Frenkel-Heyden, recently deceased. On the questions that agitate the medical profession today and that are sometimes referred to as "the crisis in medicine," Goldscheider has expressed his views in several articles, in which he warned against the overestimation of medical intuition and medical dilettantism and emphasized that the natural sciences are the essential and fundamental basis of true medical science. His last work, which appeared recently, deals with the "Treatment of Internal Disease" and has been accorded a widespread welcome by the medical profession. In 1910, he became the successor of Senator at the university policlinic, which post he continues to hold although he has passed the accustomed age. For the past two years he has been the chairman of the Berliner Medizinische Gesellschaft, which, on the occasion of his jubilee, conferred on him a title of honor.

The Seventieth Birthday of Oskar Bernhard

Oskar Bernhard, Dr. med. et phil. *honoris causa*, of Saint Moritz, Switzerland, the creator of heliotherapy in mountain regions, completed, May 24, his seventieth year. Bernhard, who was born in Samaden and until 1905 was director of the district hospital in that commune, introduced in 1902 his system of heliotherapy, which has exerted a great influence and which has been extended by him still further. The sunshine of the mountain regions is rich in ultraviolet rays and, as Bernhard was the first to recognize, exerts an almost specific influence on chronic and, particularly, tuberculous disorders of the skin, bones and joints. In accordance with this belief, he erected in Saint Moritz his private surgical clinic and his institute for heliotherapy. During the war, he established a sun clinic for surgical tuberculosis in Dürrheim (Black Forest). In his work on heliotherapy in the field of surgery he has summed up the results of his special activity. Bernhard has been conspicuous also in the field of the Alpine emergency service. The University of Frankfort conferred on him the degree of doctor of science *honoris causa*. He is also a member of the Royal Institute of Public Health in London.

ITALY

(From Our Regular Correspondent)

May 15, 1931.

Treatment of Diabetes Mellitus

Prof. Gustavo Singer delivered recently before the Accademia medica of Genoa an address on the treatment of diabetes mellitus by means of irritating substances. During the past five years the speaker has made clinical and experimental studies on the nonspecific treatment of diabetes, basing his researches on the conception that irritants of complex structure, particularly protein substances, introduced by the parenteral route, have the capacity of modifying favorably the metabolism of the diabetic patient, changing it in a permanent manner. The number of cases that he has followed is about 200. His method of treatment consists of a standard diet and of injections of protein substances. The diet is light, being based on the principle of Bouchardat. The fundamental basis consists of vegetables, with a supplement that contains the three elements of nutrition in a definite proportion: 100 Gm. of boiled or roasted meat, two eggs, 100 Gm. of fats and 50 Gm. of white bread or its equivalent. The total number of calories is between 1,700 and 1,800, obtained from 44 Gm. of carbohydrates, 75 Gm. of protein substances and 112 Gm. of fats. The injections of proteins are given intramuscularly every two or three days, the doses being increased gradually from 0.2 to 0.3 Gm., in order to avoid a febrile reaction.

Of the protein substances, the author has employed some of animal origin and some of vegetable origin. The latter act less effectively and should be employed at the beginning of treatment. He then used preparations with a milk base. The treatment covered usually a period of from six to eight weeks.

In a series of 190 cases in which he applied such treatment and which he was able to follow up, he reports the following results: notable improvement in 94 patients (48.94 per cent); some improvement in 59 (31.05 per cent); negative results in 36 (18.94 per cent); aggravation in 2 (1.05 per cent). The most favorable effects were observed in the surgical complications of diabetes.

Sanitary Technic and Urban Hygiene

The international exhibit and the second Congresso di tecnica sanitaria ed igiene urbanistica were held in Milan and were visited by the representatives of thirty countries. The first congress had been held in Prague, a year previously. The president of the second congress was Prof. Dante De Blasi, academician of Italy and director of the Istituto d'igiene della Università de Napoli.

Professor De Blasi discussed the problem of urbanorural emigration and reimmigration, from the standpoint of health, pointing out the relations of compensation and of mutual exchange that existed, in a hygienic sense, between the large urban masses, where were located the directive centers of national movements, and the rural districts.

The scientific work of the congress was divided into six distinct sections, which dealt with the following matters: (1) generalities (epidemiology, prophylaxis); (2) urban sanitary technic; (3) sanitary technic of construction of buildings (habitations, schools, hospitals, garrisons); (4) sanitary technic of the rural districts and colonies; (5) sanitary technic of offices and laboratories; (6) sanitary legislation and social insurance.

Many communications were presented, among which the most important were on the autopurification of urban air (Professor Casagrandi); the pathogenic action of the dust of large cities on the human lung (Garin and Policard); the water systems of small cities and of rural communities (Marchaud); protection against the vibration caused by street traffic (Brix) and against street noises (Bischof).

Professors Beninde and Wilhelmi discussed the progressive developments and the present trend in the hygiene of water, soil and air, with references to the respective state organization in Germany.

A number of communications dealt with the hygienic problems and the respective undertakings in various countries or large cities. The countries furnishing technical and statistical contributions were Italy, France, Germany, Czechoslovakia, Chile and Greece.

Lyons, France, was selected as the next place of meeting.

The conventionists visited, in addition to the international exhibit of sanitary technic and urban hygiene, also the principal hygienic and sanitary institutions of Milan, among which were the open-air schools, the milk central, the tuberculosis sanatorium and the cancer institute.

Meeting of Radiologists

Under the chairmanship of Prof. Aristide Busi, the twelfth session of the gruppo centro-meridionale-Siculo of the Società italiana di radiologica medica was held in Rome. The main topic on the program was descending pyelography, on which were presented communications pertaining to statistics in about 1,000 cases.

Among the conventionists, two trends of opinion were manifest. According to some (Asti and Romagnoli) such roentgenographic research is sufficient and certain in only a few cases and is to be used as an expedient solely when ascending pyelography is impossible, which is chiefly in patients in whom a catheter cannot be employed; others, however, (Turano), expressed themselves decidedly in favor of the method.

Dr. Piccimino (of Istria) and Sestini described an attempt to determine the functional symptoms of the uropoietic apparatus by means of descending pyelography, in a communication in which the results of the researches were considered from this point of view.

In renal tuberculosis, the radiologic pictures described by various observers (Lilla, Pissarello, Turano, Catalano) were decidedly varied and did not harmonize. In most of these cases, descending pyelography gave results of great value.

Nearly all the conventionists reported that in their patients they had never noted grave disturbances as a result of pyelography, although some had suffered from chills, others from pains in the shoulders, occasionally precordial pain had been complained of (Lilla), in one case there had been attempts to vomit (Asti), in some cases urticaria (Gargiulo), and in one case a slight lipothymia.

Bellucci called attention to the possibility that solutions of iopax may be changed under the action of roentgen rays in the radiologic laboratories.

Venne discussed the possibility of applying pressure along the course of the ureters in order to obtain better pyelographic shadows. The observers were inclined to admit that such a device would give good results; but Lilla raised the objection that by this method the normal aspect of the organs would be changed and that the normal renal functioning would not be experimentally reproduced.

From the discussion it appeared that the elimination of iopax follows approximately that of urea and is entirely different from the elimination of indigo carmine.

The practical conclusions reached by the session may be summed up as follows: Intravenous pyelography is harmless, and often gives important diagnostic results, although it is not always possible, in the present state of developments, to reach definite diagnostic conclusions by means of such data alone. It deserves the importance that is at present attributed to it, and should become a feature of everyday practice.

International Congress of Demographic Research

The Italian committee for the study of demographic problems has organized an international congress, which will be held in Rome, September 7-13. The program of the congress will deal solely with strictly scientific questions, and all propaganda of a political, moral and religious nature will be avoided. The congress will comprise several sections: biology and eugenics, anthropology and geography, medicine and hygiene, and demography.

Death of Professor Binaghi

The death of Prof. Roberto Binaghi, director of the Institute of Clinical Surgery and rector of the University of Cagliari, is announced. Born in 1866, he became an assistant in the Clinica chirurgica at Sassari and later occupied a similar post in the Ospedale civile at Cagliari, of which he became, in 1902, the chief surgeon. In 1903 he was appointed to the chair of surgical pathology at the University of Cagliari, and in 1907 he became director of the University surgical clinic. His most important scientific publications are the following: protective action of the peritoneum in infections of intestinal origin; virulence of *Bacillus coli* in invagination of the intestine; bactericidal potency of pus and the mechanism of its action; the pathogenesis of intestinal invagination. Great value attaches also to his observations on a personal series of 418 surgical operations in the field of urinary surgery. He was a brilliant operator and he devoted himself with zeal to the work of instruction. Since 1915 he had been the rector of the University of Cagliari, being constantly reelected to the office owing to his gifts as an organizer, to which is due also the institution of a university council, which supplements the work of the government in the field of didactics and experiments.

The Crusade Against Narcotics

Before the senate of the realm, Assistant Secretary of the Interior Arpinati spoke recently on the problem of the sale and distribution of narcotic substances and on the means of preventing illegal selling. Italy is not a producer of these substances and is obliged to import from foreign countries the quantity required for therapeutic and other purposes. Nor are the derivatives of narcotics manufactured in Italy, except in negligible quantities. These circumstances make it possible to exercise a rigorous control as regards importation and transportation, which are based on the system of issuance of permits. No less strict is the control of the domestic trade in narcotics, which is based on the necessity of pharmacists making written requests for supplies, which must be approved by the authorities. These

controls have brought the consumption of such substances within the limits of pure necessity, as may be seen from an examination of the figures pertaining to importations, which, beginning with five-year period 1925-1930, have been steadily decreasing. In 1925, 3,330 Kg. of opium, 305 Kg. of morphine, 182 Kg. of diacetylmorphine and 218 Kg. of cocaine were imported. In 1930, the foregoing values dropped to 2,211, 158, 90 and 113 Kg., respectively.

The government would be willing, in order to limit still further the consumption, to introduce a government monopoly for the manufacture of narcotics, but the preliminary inquiries that have been made have shown that the undertaking would be difficult.

The crusade against the clandestine trade in narcotics was productive of results in 1930, having led to the confiscation of a total of 24 Kg. of drugs, as compared with about 5 Kg. confiscated the previous year.

The League Against Cancer

Under the chairmanship of Prof. G. Manni, the Trieste chapter of the Lega italiana contro il cancro held recently its regular meeting. Dr. Vittorio Romanin presented a paper on the topic "The Glycoregulatory Apparatus and the Vegetative Tonus in Malignant Tumors." The author gave the results of his research on the glycoregulatory mechanism in malignant tumors, and concluded that, whereas in the fasting patient the blood sugar is maintained within normal limits, the alimentary blood sugar curve presents in cancer patients a typical course as regards the decline. This takes place much more slowly than normally, the values being maintained notably high for a longer time. This behavior of the alimentary blood sugar may be taken into consideration, with proper reservations, as a diagnostic aid in doubtful cases of malignant tumor. A negative result—namely, a normal curve—will exclude almost with certainty such a diagnosis. On the basis of various comparative tests applied to the vegetative nervous system, the author stated that an exact evaluation of the accessory phenomena that accompany the stimulation of the vagus points to a state of increased parasympathetic stimulability in malignant tumors.

Institute for Studies on Tuberculosis

In Genoa there is an Istituto di studi scientifico-pratici sulla tuberculosi, which is under the management of Prof. Edoardo Maragliano, senator. At present, a postgraduate course is being given there on the clinical pathology and prophylaxis of tuberculous disease, with especial reference to pulmonary tuberculosis. During this course, which is attended by physicians, lectures are given on the more important subjects of modern phthisiology, with descriptions and clinical practice at the bedside of patients, more especially in the field of early diagnosis and curative pneumothorax. The course is supplemented by lectures on pathology, clinical surgery, pathologic anatomy and other medical branches.

BELGIUM

(From Our Regular Correspondent)

May 21, 1931.

The Medicopedagogic Examination of School Children

The following resolution was passed at the recent congress held in Liége:

The Congrès de l'association internationale pour la protection de l'enfance hereby adopts a resolution to the effect that in all institutions of learning a physiologic and mental examination of all pupils or students be made and that record cards be employed for the classification of the pupils. As regards the physical examination, in the large cities and the important communes it is desirable that school inspection be entrusted to physicians who devote themselves exclusively to the work. Where the number of schools and of school children justify the outlay, a woman physician should be designated for the kindergartens and the girls' schools. Visiting school nurses, with the aid of the instructional corps and, if need be, of a teacher, male or female, especially delegated, will give emergency aid in small matters, including the application of certain treatments prescribed by the school physician, or the specialists will take the children to the offices of whatever children's society is indicated. The nurses will discover the existence of contagious disorders, will make social inquiries, and will keep in touch with the parents. It is desirable that the record books shall be of adequate size so that they can be utilized from the day the child enters the day nursery up to the time he finishes his studies, and, if possible, up to the time of entering the military service, so far as the boys are concerned. The health record book should furnish at least the following information and should call attention to everything that is abnormal: administrative information, date of birth, occupation of the parents, schools attended; also information on the pupil's antecedents: composition of the family, stages of physiologic and mental development, vaccinations, diseases and accidents; results of physiologic examinations pertaining to weight, the sitting height, the chest girth, the mouth, the teeth, the nose, the throat; the respiratory, digestive, urinary and genital apparatus (puberty), the skeletal system, the spinal column, the nervous system, hernia, skin, scalp, endocrine disorders, and general condition of the blood.

As concerns the mental and pedagogic examination: I. Mental examination: It is desirable that all pupils entering the school and also any pupils who have any trouble with their studies should be examined from the standpoint of their mental aptitudes. II. Pedagogic examination: It is desirable that the pedagogic examination shall consist of standardized tests adapted to each country and taking account of the pupil's previous program of studies so that exact comparisons may be made with respect to the grade of scholarship attained by the pupils. The record card on which the results of the mental and the pedagogic tests are recorded should be of such a nature that the information thereon can be utilized not only with regard to the pedagogic measures to be adopted but also with reference to decisions in connection with vocational guidance.

Congress of Industrial Medicine

The Congrès de médecine du travail met at Liége under the chairmanship of Dr. François, who outlined in his opening address the questions that the congress was to discuss: surgery of accidents, occupational diseases, disability estimates, hygiene, prevention of accidents, and vocational guidance. He emphasized that reliance must not be placed solely on the operation of the laws but that an individual effort must be put forth for the solution of the new postwar social problem.

The first paper on the program was presented by Dr. René Sand, who took as his subject the rôle and the organization of the preventive examination. Professor Lahy, of the Sorbonne, and Professor Sollier, of the Institut des hautes études de Belgique, explained the significance of psychotechnics, a new science that considers the proper and best conditions for the securing of the greatest and the most perfect output from the labor produced by the human motor apparatus, deducing from this study the aptitudes that the person should possess who is called on to perform a given type of work and proceeding finally to an examination of the mental and the psychomotor faculties of candidates.

Dr. Langelez, utilizing the statistics of the minister of labor, showed the advantages of the scientific organization of labor and brought out by his researches reasons for new efforts and for greater progress. Dr. Watry devoted his attention, in an original article, to the mobilization of fractures of the jaws, in which complete anatomic restitution is absolutely indispensable. He explained the technic of Rubbrecht and also his own technic by which the complete restoration of the patient is assured.

Dr. Courtois gave an account of the disorders affecting coal miners. In addition to the ordinary disorders, there are pul-

monary fibrosis, emphysema and pulmonary tuberculosis, which take in miners a peculiar course. Pulmonary anthracosis, with its peculiar anatomopathologic and radiologic characters, is rarely observed other than in coal miners. It must be classed among the occupational diseases. Emphysema offers in miners some interesting peculiarities, for which reason it should be more carefully studied. Pulmonary tuberculosis takes a peculiar course only in miners already affected with pulmonary anthracosis. In the latter, it appears as an excessively grave complication, usually with a rapidly fatal termination.

Belgian Congress of Neurology and Psychiatry

The tenth Congrès belge de neurologie et de psychiatrie was held under the chairmanship of Mr. Titeca. The official paper on the first topic, "Congenital Disorders of Speech," was presented by Dr. Ley, who considered successively the disorders of speech without primary mental insufficiency (which are the most instructive); the disorders of speech due to primary mental insufficiency, and, finally, the disorders of enunciation in the spoken language. He concluded that speech is never affected in its development as is an independent function. It is affected only by the defects of the various primary factors that enter into it. The primary defect, although manifested chiefly in oral speech, extends in all cases far beyond that. The disorders are manifested chiefly in speech because of the importance of the mental and practical elements involved. The deficit in these functions presents itself, as a rule, as a retardation rather than as a vitium or an arrest of development. It is a question of disorders of evolution. The same is true of the disorders of integration in written speech. Such disorders present themselves in a much more selective manner than do the disorders of oral speech. Properly speaking, a disorder of speech is not involved but rather a partial mental defect that attains a higher functional level than the defect in oral expression. All disorders affecting the integration of speech are more frequent in the male than in the female sex. The phenomenon is a difficult one to interpret. A careful study of the disorders of speech development reveals that the use of words brings into play all the principal forms of cerebral activity and that it is impossible to ascribe to such activity, either anatomically or functionally, an independent character.

THE ANGIONEUROSES

According to Drs. P. Divry and M. Moreau of Liége, the symptoms constituting in their entirety the clinical picture of the various types of angioneuroses may be divided into two groups: disorders of vascular contractility and disorders of capillary permeability. Vascular contractility is normally influenced by four preponderant factors: intervention of the nervous system, action of endocrine glands, variation of the humoral equilibrium, and chemical modifications of the perivascular tissues. One may assume *a priori* that the angioneuroses may depend on a single one of these factors or on several of them combined. Arterial contractility and venous contractility are now well accepted conceptions, but the existence of a contractile autonomy of the capillaries is less generally admitted. There are, however, so many arguments pointing in that direction that it is difficult not to accept it as real.

The question of the localization of the vasomotor centers in the central nervous system is still a controversial point. The part played by endocrine factors is established beyond all doubt. It is known that disorders of the glands of internal secretion are often associated with vasomotor disturbances.

The modifications of vascular contractility occurring during angioneuroses may take the form of vasoconstriction or vasodilatation. The former occasions the angiospasm, which is the basis of a considerable number of vascular neuroses. The angiospasm plays an important part in the production of intermittent claudication of the extremities and in that of the marrow. It plays a part also in the syndromes of pulmonary claudication of Frugoni and intestinal claudication of Ortner. It is involved also without doubt in the production of certain anginal states: painful angioneurosis of the breast, certain cerebral disorders—retinal and labyrinthine, the Raynaud syndrome and possibly sclerodermia. With angiospasms are associated also certain conditions of arterial hypertension known in Germany under the name of "essential hypertonia." The vasodilatation is traceable to two principal mechanisms: excitation of the vasodilators that give rise to erythromelalgia, and abolition of the vasoconstructive tonus that produces acrocyanosis.

BUENOS AIRES

(From Our Regular Correspondent)

May 28, 1931.

University News

The three schools (medicine, law and general sciences) which constitute the University of Buenos Aires were temporarily closed on account of the state of affairs caused by the enactment of a law by which the students lose the privilege of intervening in the appointment of the dean and the counselors of the faculties. The faculty of medicine called an election of authorities in order to reopen the school, June 1. The following were elected: Drs. C. Bonorino Udaondo, dean; B. A. Houssay, vice dean, and M. R. Castex, R. Sarmiento Laspiur, R. Bullrich, D. Greenway, J. Cabanne, J. Rumi, N. Donovan, J. C. Ahumada, A. Cabrini and M. Ruiz Moreno, regular professors. Drs. A. Peralta Ramos and R. Argañaraz were elected delegates to the superior council. According to the regulation now in force, students did not intervene in these elections. They have heretofore appointed four counselors, who must be graduating at the time. At the present they must appoint only a senior representative with highest scholastic standing for each of the three schools of the university. The representatives may present before the authorities of the university the wishes and needs of the students, but they have no right to vote except in the election of the dean and regular professors. Seventy-five per cent of the students were present for the election of the senior representatives, but 90 per cent of the ballots for the election were returned blank because the students did not agree with some of the dispositions of the statutes. The two following clauses form the main grounds on which the students reject the new by-law: Examinations for promotion are required every three months instead of every semester, and the pupil who fails for two consecutive years in his studies should be suspended or pay a double amount of fees.

Personal Items

Dr. E. Zárate, professor of obstetrics and director of the clinic of the Ramos Mejía hospital, resigned his positions after having reached the age limit. In his last class he gave a lecture on symphysiotomy as performed according to his own technic and he also spoke on the indications and results of the operation. During his lecture the speaker presented two films on the same topic, one of which was prepared by himself and the other by Dr. Brindeau.

Dr. G. Araoz Alfaro, president of the Department of Hygiene of Buenos Aires, who went to Washington to attend the Pan-American conference of directors of hygiene, which was recently held there, is at present in Paris to attend the meeting of the Committee of Hygiene of the League of Nations. Dr. Padilla is in charge of Dr. Araoz Alfaro's duties in the department of hygiene during the latter's absence.

New Journal

The first issue of the *Archivos Argentinos de Medicina Legal*, which is the official organ of the Sociedad de Medicina Legal y Toxicología, has appeared. Drs. Nerio Rojas and J. Belbey are the editor and assistant editor, respectively.

Marriages

HAROLD C. VORIS, Chicago, to Miss Ila Thelma Knight of Evanston, Ill., in Salina, Kan., June 27.

WILLIAM CAREY HENDERSON, Nassawadox, Va., to Miss Mary Ferebee of Eastville, June 27.

BENJAMIN RALPH WILSON to Miss Nannie Coons Ramey, both of Sharpsburg, Ky., June 15.

EVA J. LINE, Niles Center, Ill., to Mr. Ardel Frownfelter of Chicago, in Diller, Neb., June 10.

BEN Z. RAPPAPORT to Miss Sally Goldberg, both of Chicago, June 28.

Deaths

John C. Boehm, St. Cloud, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1893; an Affiliate Fellow of the American Medical Association; at one time member of the advisory committee of the board of regents of the State University of Minnesota; formerly secretary of the Stearns-Benton County Medical Society; for many years member and president of the board of education; aged 71; died, June 8, of myocarditis and urinary obstruction.

Lewis Park Drayer ⊕ Fort Wayne, Ind.; Fort Wayne College of Medicine, 1895; member of the Central States Pediatric Society; professor of pediatrics, Indiana University School of Medicine, Indianapolis; on the staff of St. Joseph's Hospital; formerly member of the city board of health; aged 61; died, June 24, in the Battle Creek (Mich.) Sanitarium, of heart disease and nephritis.

Albert Eugene Sterne ⊕ Indianapolis; University of Berlin, Berlin, Germany, 1891; professor of mental and nervous diseases, Indiana University School of Medicine; member of the House of Delegates of the American Medical Association in 1912; formerly chief of staff of the "Norways" Sanitarium; aged 65; died, June 30, in Denver, of heart disease.

Gayle Graham Moseley ⊕ Redlands, Calif.; Kentucky School of Medicine, Louisville, 1894; past president of the San Bernardino County Medical Society and formerly councilor of the third district of the California Medical Association; aged 56; died, June 17, of cardiorenal vascular disease and cerebral hemorrhage.

Howard Roy Chislett ⊕ Chicago; Hahnemann Medical College and Hospital, Chicago, 1888; formerly clinical professor of surgery at his alma mater; member of the American College of Surgeons; on the staff of the Chicago Memorial Hospital; aged 69; died suddenly, June 13, of coronary thrombosis.

Benjamin M. Steinberg ⊕ Denver; Denver and Gross College of Medicine, 1909; on the staffs of the Denver General Hospital, St. Anthony's Hospital, Children's Hospital, Beth Israel Hospital and the National Jewish Hospital for Consumptives; aged 45; died, June 5, of chronic myocarditis and nephritis.

Ira James Stoner, Durham, N. C.; Memphis (Tenn.) Hospital Medical College, 1898; member of the Medical Society of the State of North Carolina; served during the World War; aged 62; died, June 22, in the Duke University Hospital, of chronic myocarditis, arteriosclerosis and chronic nephritis.

Foy Earnest Blue, Bessemer, Ala.; Emory University School of Medicine, Atlanta, 1921; member of the Medical Association of the State of Alabama; aged 34; died, June 6, in a hospital at Birmingham, of hemolytic septicemia following an operation for mastoiditis.

Herman Feighery Pohlmeyer, Lexington, Ky.; Eclectic Medical Institute, Cincinnati, 1908; University of Cincinnati College of Medicine, 1910; member of the Kentucky State Medical Association; aged 52; died, June 2, of heart disease.

Albert L. Gray, St. Joseph, Mo.; Medical College of Ohio, Cincinnati, 1884; Bellevue Hospital Medical College, New York, 1892; member of the Missouri State Medical Association; aged 75; died, June 8, of chronic interstitial nephritis.

Leon Blackburn Santee, Marlboro, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1878; member of the Ohio State Medical Association; aged 77; died, May 14, of cardiovascular disease and arteriosclerosis.

James Marshall Price ⊕ Frostburg, Md.; University of Maryland School of Medicine, Baltimore, 1890; past president of the Allegany County Medical Society; aged 62; died, May 24, of chronic myocarditis and angina pectoris.

Loren Call Barlow, Phoenix, Ariz.; Washington University School of Medicine, St. Louis, 1926; member of the Arizona State Medical Association; aged 36; died, June 2, in St. Joseph's Hospital, of epidemic meningitis.

William Jordan Maybury, Saco, Maine; Medical School of Maine, Portland, 1886; formerly secretary of the Maine Board of Registration of Medicine; aged 73; died, April 19, in Augusta, of cerebral hemorrhage.

Edward Taylor Glass, Birmingham, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1890; member of the Medical Association of the State of Alabama; aged 65; died, May 29, of heart disease.

William Harlan Peters ⊕ Providence, R. I.; Baltimore University School of Medicine, 1895; veteran of the Spanish-American War; on the staff of St. Joseph's Hospital; aged 62; died, May 23, of heart disease.

William Arthur Sheehan ⊕ Boston; Boston University School of Medicine, 1926; member of the Associated Anesthetists of the United States and Canada; aged 32; died, May 18, of acute bacterial endocarditis.

Harry Meissler, Chicago; Northwestern University Medical School, Chicago, 1917; member of the Illinois State Medical Society; aged 41; died, June 7, in the Wesley Memorial Hospital, of pneumonia.

Leonidas C. Dickerson, Stuart, Va.; University of the South Medical Department, Sewanee, Tenn., 1900; member of the Medical Society of Virginia; aged 61; died, May 22, of diabetes mellitus.

Walter Waugh Murphy ⊕ Minneapolis; Northwestern University Medical School, Chicago, 1911; aged 46; died, June 1, near Hinckley, Minn., of injuries received in an automobile accident.

Clinton Cyrus Wells ⊕ Boston; Tufts College Medical School, Boston, 1929; aged 24; on the staff of the Beth Israel Hospital, where he died, May 30, following an operation for appendicitis.

William Sheldon Wilcox, El Monte, Calif.; Rush Medical College, Chicago, 1900; aged 58; died, May 20, in the Southern Pacific General Hospital, San Francisco, of recurrent endocarditis.

John Henry Erling, Jr., Brooklyn; Long Island College Hospital, Brooklyn, 1894; member of the Medical Society of the State of New York; aged 60; died, June 17, of Hodgkin's disease.

Albert Hayward Nall, Brazil, Ind. (licensed, Indiana, 1897); member of the Indiana State Medical Association; Confederate veteran; aged 86; died, June 14, of chronic myocarditis.

Thomas Melville Wright, Troy, Ohio (licensed, Ohio, 1896); member of the Ohio State Medical Association; aged 82; died, May 29, of pneumonia, heart disease and diabetes mellitus.

Ralph John Pantzer, San Saba, Texas; Indiana University School of Medicine, 1922; served during the World War; aged 37; died, June 6, in San Antonio, of tuberculosis of the lungs.

William S. White ⊕ Fort Valley, Ga.; University of Georgia Medical Department, Augusta, 1901; mayor of Fort Valley; aged 51; died, June 11, in Macon, of acute myocarditis.

Marshall Jewell Adams, New Haven, Conn.; New York Homeopathic Medical College and Hospital, 1887; aged 66; died, June 16, of portal cirrhosis of the liver and myocarditis.

Henry J. Pierron, Brooklyn; New York Homeopathic Medical College, 1884; for many years on the staffs of the Brooklyn and Cumberland hospitals; aged 73; died, May 28.

Roscoe Lewis, Carbondale, Ill.; St. Louis College of Physicians and Surgeons, 1904; member of the Illinois State Medical Society; aged 48; died, May 27, of coronary thrombosis.

William C. Wallace ⊕ Ingram, Pa.; Jefferson Medical College of Philadelphia, 1886; aged 68; died, June 12, of auricular fibrillation, pulmonary embolus and myocarditis.

Charles H. Neill, Minneapolis; Hahnemann Medical College and Hospital, Chicago, 1892; aged 60; died, May 27, in the Vocational Hospital, of uremia and prostatic calculus.

John Henry Becker, Fair Haven, N. J.; Medical Department of the University of the City of New York, 1885; aged 72; died, June 14, of carcinoma of the prostate and uremia.

Joseph Dean Oldham, Raymondville, Texas; St. Louis College of Physicians and Surgeons, 1901; member of the State Medical Association of Texas; aged 69; died, May 5.

Jesse P. Penberthy, Bryan, Ohio; Medical Department of Western Reserve University, Cleveland, 1890; formerly county coroner; aged 62; died, May 10, of splenic anemia.

Edward E. Meredith, Louisville, Ky.; Southwestern Homeopathic Medical College and Hospital, Louisville, 1901; aged 58; died, June 10, of endarteritis obliterans.

Charles Lewis Waters ✠ Washington, D. C.; George Washington University Medical School, Washington, 1905; aged 52; died, June 17, of carcinoma of the liver.

Herman J. Hensley, Yates City, Ill.; Rush Medical College, Chicago, 1887; formerly mayor of Yates City; aged 67; died, May 25, in the Proctor Hospital, Peoria.

Perry G. Moore, Wabash, Ind.; Cincinnati College of Medicine and Surgery, 1866; aged 86; was found dead in bed, June 9, in Huntington, of cerebral hemorrhage.

Frank C. Raynor, Oslo, Norway; Long Island College Hospital, Brooklyn, 1886; formerly on the staff of the Brooklyn Eye and Ear Hospital; aged 70; died, May 25.

Edmund N. Lippincott, North Harpswell, Maine; University of Pennsylvania School of Medicine, Philadelphia, 1894; aged 61; died, May 28, of angina pectoris.

Isaac A. Ryan, Fort Smith, Ark.; University of Arkansas School of Medicine, Little Rock, 1887; member of the Arkansas Medical Society; aged 70; died, April 9.

Raymond William Mills, Syracuse, N. Y.; University of Buffalo School of Medicine, 1907; aged 45; died, June 9, of carcinoma of the liver and myocarditis.

John David Morris, Piedmont, Ala.; Atlanta Medical College, 1914; member of the Medical Association of Georgia; aged 46; was shot and killed, May 22.

Nathaniel Whitaker Voorhees, High Bridge, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1883; aged 72; died, June 3, of heart disease.

Silas H. Whitehead, Grapevine, Ark.; Memphis (Tenn.) Hospital Medical College, 1892; aged 58; died suddenly, April 21, of fatty degeneration of the heart.

George Winfield Williamson, Los Angeles; University Medical College of Kansas City, 1882; aged 78; died, April 6, of bronchopneumonia and cystitis.

George Humphrey Gwynn, Tallahassee, Fla.; Medical Department of the University of the City of New York, 1885; aged 69; died, June 8, of uremia.

Constantine George Katradis ✠ New York; University of Athens School of Medicine, Athens, Greece, 1914; aged 41; died, April 1, of lobar pneumonia.

Henry Martyn McCandliss, Pasadena, Calif.; Jefferson Medical College of Philadelphia, 1885; formerly a medical missionary; aged 72; died, June 14.

Wade D. Fowler, Simpsonville, S. C.; University of Georgia Medical Department, Augusta, 1887; aged 68; died, May 31, of arteriosclerosis.

George Washington Butterfield, Hopkinton, Mass.; Boston University School of Medicine, 1883; aged 71; died, April 28, of cerebral hemorrhage.

David Bercinsky ✠ New Haven, Conn.; Yale University School of Medicine, New Haven, 1902; aged 65; died, June 9, of coronary occlusion.

Otto Bishop Cornell, Westerville, Ohio; Ohio Medical University, Columbus, 1902; aged 61; died, May 5, of myocarditis and nephritis.

Charles Alfred Fetterhoff, Baltimore; Hahnemann Medical College of Philadelphia, 1910; aged 43; was accidentally drowned, June 11.

Ernest Ellwood Anderson, Crewe, Va.; North Carolina Medical College, Charlotte, 1917; aged 38; died, April 21, of lobar pneumonia.

E. T. Read, Keller, Texas; Hospital College of Medicine, Louisville (Ky.), 1884; aged 72; died, suddenly, April 20, of heart disease.

John Harold Powers ✠ McPherson, Kan.; Kansas City Medical College, 1904; aged 55; died, June 15, of cerebral hemorrhage.

Benjamin Burrus, Franklin, Ky.; Meharry Medical College, Nashville, Tenn., 1897; aged 57; died, June 3, of nephritis.

James E. Matteo, New York; Long Island College Hospital, Brooklyn, 1908; aged 44; hanged himself, June 9.

Bureau of Investigation

VAPEX

Vapors of Alcohol and Menthol as a "Cold" Cure

Vapex is manufactured by Thomas Kerfoot and Company, Ltd., England and is distributed in the United States by E. Fougera and Company, Inc., New York. The stuff is sold at a price that would seem to be enormously in excess of the cost of its ingredients, which may explain the vast sums that have been spent on persuading the public that the product is a marvel of therapeutic efficiency. Some of the advertising slogans of the expensive campaigns have been:

"Vapex Amazed Scientists . . . Its vapor kills cold germs."
"Instant relief for nasal affections with its delightful vapor."
"Breathe your cold away."
"Swiftly, surely . . . Vapex breaks a cold with its crisp, delightful vapor."
"In a tiny drop of Vapex is all day long relief from colds."

Another claim equally preposterous is the statement, run in an advertisement in *Good Housekeeping Magazine*—shades of Dr. Wiley!—to the effect that "relief from head colds is instantaneous with Vapex." The *New York Times* in a full page advertisement in the rotogravure section of a Sunday issue described Vapex as "Swift Relief for Colds," and, apparently as an excuse for breaking its general rule to carry no "patent medicine" advertisements, mentioned the fact, in the advertisement, that "Vapex is Approved by *Good Housekeeping.*"

Possibly because the claim that putting a drop of any substance on a handkerchief or a pillow would cure a "cold," would seem preposterous, the Vapex company bolsters up its statement by "laboratory reports." The reports in this case come from the Pease Laboratories, a concern which, it might be stated parenthetically, is not adding to its reputation among scientific men by the type of commercial reports that it issues for nostrums. The Pease Laboratories carried out a series of experiments, in some of which silk threads were impregnated with *Micrococcus aureus* and *Streptococcus hemolyticus.* The threads were then suspended in a sterile glass jar of about 5½ pints capacity, so that they were approximately half-way between the bottom and the top of the jar. About half a bottle of Vapex (6.62 cc.) was put in the bottom of the jar and the top of the jar sealed and held at body temperature. Even under such favorable (for Vapex) conditions, nothing happened to the *Micrococcus aureus* after an hour's exposure in this heavy concentration of Vapex. After two hours, the bacteria ceased to grow. With the *Streptococcus hemolyticus,* nothing happened for one-half hour, but at one hour they, too, ceased to grow.

On the basis of these and similar experiments, the Vapex concern professes to prove that its product kills germs—Q. E. D. Undoubtedly, if similar methods were used on a large scale with human beings, they could prove that it would kill *Micrococcus aureus* on the nasal membrane and even kill the human subjects, themselves! Even an intelligent layman, with no scientific training, should see the fallacy of the fantastic figures of the Pease Laboratories, that the Vapex exploiters present to show the alleged germ-killing potency of their product. The conditions of the experiment do not remotely parallel the conditions under which Vapex is used—one drop on a handkerchief or one drop on a pillow. Yet, it is such "proof" as is offered to, and accepted by, newspapers and magazines which express some doubt about the claims made by the Vapex exploiters.

Nor are "colds" the only thing that Vapex will banish! It has also been so advertised as to make the public believe it will cure hay fever; not, of course, that the exploiters use any such crude term as "cure." "Vapex may Relieve your Hay Fever" shouts the title of a four-page leaflet that is sent out with a small piece of gauze enclosed in a wax-paper envelope. The gauze is said to contain "the equivalent of one application of Vapex." The booklet states that while the most effective means for the immunization and cure of hay fever is inoculation, yet:

"Vapex, which has won nation-wide merit for its efficacy in cases of nasal infections, while not offered as a cure for hay-fever, has in thousands of stubborn cases brought quick and sure relief."

Doubtless there are many sufferers from hay fever who would be just as well satisfied with a "quick and sure relief" as with a "cure."

As is the case in the exploitation of most nostrums, the Fougera concern gives no information regarding the composition of Vapex. The advertising story is to the effect that the discovery of Vapex was accidental; that certain chemists in Thomas Kerfoot and Company, Ltd., of England were engaged in important experiments for the British Government when the British Isles were swept by an influenza epidemic; that many of the workers in other departments of the Kerfoot concern were stricken, but the one department in which the chemists were working on the alleged important experiments was unaffected by the disease and were, apparently, made immune to influenza; that this gave rise to the belief that the product with which they were experimenting had, in some way, protected them; that they decided that "an important medical discovery had been made." Like true "patent medicine" exploiters, however, instead of giving to the world the knowledge thus obtained, or alleged to have been obtained, of a preventive, if not cure, for influenza and a cure for nasal infections, the product and method of making it has been and is kept secret.

Vapex seems to have been analyzed at different times and places. We learn from *Mededeelingen van het Rijks Instituut voor Pharmaco-Therapeutisch Onderzoek* that Vapex is essentially an acetone solution of lavender and peppermint oils. An American laboratory in the east reported that their analysis

VAPEX amazed scientists...
its vapor kills cold germs
INSTANT RELIEF FOR NASAL INFECTIONS WITH ITS DELIGHTFUL VAPOR
VAPEX
VAPEX
Vapex was discovered in England at the height of a terrible war-time epidemic of influenza. With new victims round them every day, chemists in a government laboratory were completely immune to the disease. Without doubt, the vapor from the ingredients now in Vapex kept them free from infection.... Physicians and scientists were amazed. For here was a swift, sure relief for colds. Highly concentrated, this new discovery was offered to the public as Vapex.... A drop of Vapex on your handkerchief gives a refreshing odor that instantly relieves colds. Breathed deeply, it clears the head, banishes congestion, limits the infection. Use it in the morning, Vapex keeps its strength all day. At night, a drop at each end of your pillow lets you sleep and fights the irritation then....

showed Vapex to contain about 10 per cent by volume of acetone and in the neighborhood of 40 per cent of alcohol. The laboratory of a large mail-order house in the middle west reported that its analysis of Vapex disclosed the presence of 74 per cent of alcohol and 26 per cent of mixed oils of menthol, eucalyptus and lavender.

In spite of the fact, therefore, that two American laboratories found a large percentage of alcohol in Vapex, and in spite of the further fact (as will be shown later) that a most careful analysis made by the Chemical Laboratory of the American Medical Association also showed the presence of large quantities of alcohol, Vapex carries on the trade package no declaration of the presence or amount of alcohol, as required by the national Food and Drugs Act. Section 8 of the national law declares a drug to be misbranded if the package containing it fails to bear the statement on the label of the quantity or proportion of alcohol it contains. The same law defines a drug as a product that is used for the alleged cure or alleviation of disease. Certainly, no intelligent person could read the Vapex advertising without being firmly convinced that the Fougera company expressly offers Vapex for the alleviation, if not the cure, of pathologic conditions.

In order that further information regarding the composition of Vapex might be determined, the Bureau of Investigation turned over to the A. M. A. Chemical Laboratory a number of bottles of Vapex in the original, unopened packages, bought on the open market. The chemists' report follows:

LABORATORY REPORT

"A quantity of Vapex (E. Fougera & Co., Inc., New York, N. Y.) was submitted by the Bureau of Investigation to the A. M. A. Chemical Laboratory for examination. On the package containing the bottle were the following statements:

"A drop on your handkerchief—Breathe your cold away."

"This package contains fifty applications of Vapex. A powerful inhalant generally indicated in the treatment of head colds. Price, $1."

"Tested and Approved by the Bureau of Foods, Sanitation and Health, conducted by *Good Housekeeping Magazine.*"

"The solution in the bottles was of a greenish-amber color. The odor was that of a mixture of menthol and oil of lavender flowers. Qualitative tests indicated the presence of alcohol. Acetone in more than traces was not found. (The presence of alcohol was not declared on the label.) The combined contents delivered from the twelve bottles was 163 cc.; the average amount in each bottle was 13.6 cc. (a little less than ½ fl. oz.). The following constants for the solution were determined:

"Specific gravity $\left(\frac{20°}{20°}\text{ C.}\right)$	0.8422
"Rotation, 25° C., 200 mm. tube	−16.54
"Refractive index, 25° C.	1.3939
"Approximate oil volume,* water shake out from 10 cc.	33 per cent (by volume)
"Water to produce turbidity in 5 cc.	1.58 cc.
"Alcohol, A.O.A.C. Method.	60.5 per cent (by volume)

"A 'synthetic method' of analysis was used for the preparation of a solution having similar constants and odor. After repeated trials, a solution was made according to the following formula:

"Menthol, U.S.P.X Crystals	14.81 Gm.
"Oil Lavender Flowers, U.S.P.	14.84 cc.
"Alcohol 95.2 per cent to make	100 cc.

"The constants of this solution as determined were:

"Specific gravity $\left(\frac{20°}{20°}\text{ C.}\right)$	0.8383
"Rotation, 25° C., 200 mm. tube	−16.94
"Refractive index, 25° C.	1.3927
"Approximate oil volume,* water shake out from 10 cc.	33 per cent
"Water to produce turbidity in 5 cc.	1.52 cc.

"The preparation had an odor very similar to that of Vapex. From the similarity of the above constants, it may be concluded that a solution having essentially similar chemical and physical attributes as Vapex may be made as follows:

"Menthol	15 Gm.
"Oil Lavender Flowers	15 cc.
"Alcohol 94 per cent to make	100 cc."

From the chemists' report it appears that this alleged "important medical discovery" is essentially menthol dissolved in alcohol and perfumed with oil of lavender! And it is sold under the implied claim that it will cure nasal infections, give quick relief from catarrh and hay fever, and prevent influenza! Based on the A. M. A. Chemical Laboratory's analysis, the ingredients in a one-dollar bottle of Vapex should cost, at wholesale, even using tax-paid alcohol, not more than seven cents. What a noble proportion this leaves for overhead and dividends! No wonder the concern can afford to spend thousands with newspapers and magazines in the exploitation of this nostrum!

No matter what Vapex may or may not do to germs in a closed bottle, it should be obvious to every physician that the product is for all intents and purposes merely an expensive substitute for the old-time menthol inhaler. Vapex will, in the opinion of THE JOURNAL, do no more in the way of curing nasal infections, relieving hay-fever or preventing influenza than will ordinary menthol!

* Ten cc. of the solution was transferred to 30 cc. water contained in a 50 cc. nitrometer burette. The burette was stoppered, inverted ten times and set aside for about one and one-half hours. The difference between the burette readings for the upper and lower meniscus of the oily layer was considered as the approximate oil volume.

The Obvious Task of Anthropology.—To understand man, therefore, which is the obvious task of anthropology, we need to consider, without evasion or euphemism, the antehuman and primitive impulses and motivations which governed his behavior. We can never do that if we insist upon trying to make him behave as we think a primitive gentleman should.—Calverton, V. F.: The Making of Man, New York, Modern Library, 1931.

Correspondence

GENESIS OF THE WORD "VERONAL"

To the Editor:—The brief article concerning the Chemistry of Barbital and Its Derivatives (THE JOURNAL, May 30, p. 1869) by Collins and Leech has helped me to freshen my chemical knowledge. At the same time, footnote 12, concerning the genesis of the word "Veronal," revived the memory of my beloved teacher Freiherr von Mering, who introduced me to the field of internal medicine in the years of 1904 to 1907.

At that time von Mering was extensively experimenting at his university hospital at Halle-Saale with a new narcotic, "Veronal," discovered by him and Emil Fischer. Every semester he proudly told us how he happened to call this child of his brains "Veronal." He was on a vacation trip to Italy and the train had stopped at Verona, when a telegram from Emil Fischer was handed to him informing him that he had succeeded in the synthesis of Mering's compound. Von Mering was so pleased by this success that he decided to call the substance "Veronal."

He was not only a prominent scientist but also a good business man. He called his preparation "Veronal" because he felt that it would be a name easily attracting the attention of the public.

This is the authentic story of the genesis of the name "Veronal." Emil Fischer's son is wrong with his explanation.

KURT F. BEHNE, M.D., Los Angeles.

DEVICE FOR MAKING TRACTION ON FINGERS

To the Editor:—April 11, I published in THE JOURNAL a description of a device for making traction on fingers, the application of which was principally in fractures of the two bones of the forearm. The traction on the fingers was made by what are known in the notion trade as "finger traps," and the manner in which these were assembled for traction on the full hand was illustrated.

It has recently been called to my attention that a similar device was described to be attached to the toes for suspension of the foot by Louis Sayre in his book on "Orthopedic Surgery and Diseases of the Joints," published by D. Appleton & Company in 1876, and an illustration quite similar to the one which I have shown attached to a patient's foot appears on page 182 as figure 125.

Of course, this use of these so-called Indian puzzles was unknown to me at the time I wrote the description. I am indebted to Dr. Max Trubek, 121 East Sixtieth Street, New York, for calling my attention to this unconscious plagiarism.

JOHN A. CALDWELL, M.D., Cincinnati.

KAHN TEST AND WASSERMANN

To the Editor:—Rather late in the day, I fear, I have just seen in your issue of May 2 a commentary by Miss Elizabeth B. McDermott on a communication by Drs. R. G. Owen and H. E. Cope which does not seem to convey quite a correct impression of the proceedings of the second Laboratory Conference at Copenhagen in 1928. Miss McDermott states that "those who are familiar with the proceedings of the conference know that the recommendation of the use of two methods was originally made in order to 'appease' Dr. Kahn. . . ." Reference to the Report of the Technical Laboratory Conference held at Copenhagen in 1923 (League of Nations C 5 M 5 1924, III [C. H. 148] p. 69) shows the following among the conclusions. "It is therefore recommended that the Bordet-Wassermann test and the flocculation tests be carried out side by side, since by such a combination the best results have been obtained." At the conference in 1928 Dr. Kahn was the most insistent on the elimination of the Bordet-Wassermann test and I was the most insistent on its retention as one of the minimum two tests which should be employed. A subcommittee of two—Dr. Kahn and myself—was formed to argue it out in private, but we did not reach an agreement, and the subject reached the plenary session, where Dr. Kahn spoke at great length in favor of his proposal. Eventually, in order to bring the proceedings to a timely close, I suggested the compromise conveyed in the footnote on page 12 of the Report of the Second Laboratory Conference. The list there shown comprises the spokesmen for seventeen out of the twenty-two institutes which sent delegates to the conference. The minority comprised Dr. Madsen, representing the State Serum Institute, Copenhagen; Dr. Vernes, Prophylactic Institute, Paris; Professor Forssman, Pathologic Institute, Lund, Sweden; Dr. Wassaf, State Institute of Ankara, and Dr. Kahn.

L. W. HARRISON, London, England.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HYPERTENSION AND LONGEVITY

To the Editor:—In his paper on "Hypertension and Longevity" (THE JOURNAL, April 4), Dr. Riesman dwells on the apparent slower pace, greater leisure and less overweening ambition which differentiates European from American culture. He feels that if Americans would emulate and aquire the European attitudes, hypertension cases would be fewer among us. Granting these conditions to obtain in Europe, do you know of any data that demonstrate a lower incidence of hypertension among these peoples? Several writers (with slender evidence) have stated this to be true in China and India, but as for Europe? I will thank you for references.

ORREN LLOYD-JONES, M.D., Los Angeles.

ANSWER.—The subject of hypertension occupies far less prominence in the continental journals than in those of the United States. Indeed, the subject is rarely discussed by European clinicians. One of the most distinguished physicians in Berlin wrote, Nov. 20, 1930, that he found it impossible to procure any statistical material. It might have been obtainable from the German insurance companies but their records were destroyed during the inflation period. He tried to get information from a large Swiss insurance company but this company had no statistics that could be utilized. If hypertension and its concomitant diseases occupied the same prominence in Europe, especially in Germany, that it does in this country, the physicians consulted would have been able from their own experience to give pertinent information.

Reports of blood pressure studies on the Chinese (Cadbury) and the Filipinos show hypotension is the rule.

POSSIBLE CELIAC DISEASE OR PYLOROSPASM

To the Editor:—An infant, aged 9 months, weighing 15½ pounds (7 Kg.), was full term, normal delivery, weighing 6 pounds 10 ounces (3 Kg.), was nursed until 5½ months with satisfactory gain. It had tomato juice regularly for the past few months and has been taking cod liver oil during the same time. Since weaning, it has taken the ordinary formula, with vegetables and cereals indifferently, vomiting two or three times daily; the stools have been comparatively normal (occasionally becoming loose and greenish and bulky). The gain in weight has been comparatively slight, having increased 1 pound in the past two months. The infant is bright and active and its physical condition seems normal. The measurements of the body, head and chest are normal. It has two teeth and the muscle tone is fair, including the abdominal muscles. The abdomen is not protuberant and there is no evidence of rickets aside from moderate beading. Would you consider this condition one of early or potential chronic intestinal indigestion (celiac), with or without allergy to cow's milk? Would you advise a milk-free diet for an infant of this age (when it vomits the other solid foods as well); or would a protein milk formula with banana in the diet be preferable? Kindly omit name if published.

M.D., New York.

ANSWER.—The picture described is not that of celiac disease. In celiac disease there are frequent attacks of diarrhea (large foul bulky stools) with rapid loss of weight during this period, a poor appetite, irritability, and a distended, tympanitic abdomen in contrast to the emaciation and stunted growth of the rest of the body. Muscular activities are considerably retarded. Vomiting is not common. Possibilities of allergy to cow's

milk should be considered, but more likely pylorospasm is present. This could be confirmed by a barium meal and roentgen examination, which would show a delayed emptying time of the stomach. The vomiting might be explained on the basis of anorexia with voluntary vomiting when the food is forced. This is especially to be looked for in bright, active infants. Atropine sulphate, 1/150 grain, combined with phenobarbital, 1/4 grain twenty minutes before feeding, often relaxes the spastic stomach and diminishes the ability to vomit. The use of evaporated milk mixed with an equal quantity of water, or lactic acid milk (if the infant will take it) often assists in controlling the vomiting because of the small curd. The feedings should never be forced. Possibly a strange nurse might have more success in feeding the infant. The whole story sounds like that of an infant with a small relatively spastic stomach with a secondary behavior problem due to forced feedings, the vomiting resulting probably from the pylorospasm plus voluntary regurgitation.

PREVENTION OF BREEDING OF MOSQUITOES

To the Editor:—What is the best method to prevent mosquito breeding in surface wells (20 to 30 feet)? If a well is not to be used for several months, is there any chemical that may be used that would not impair the well for future use? O. R. KELLY, M.D., Sheridan, Ark.

ANSWER.—By far the best method of preventing the breeding of mosquitoes in wells is the sealing of the wells and the adoption of pumps. When complete sealing by concrete or stone is not practical, the well may often be screened; but if this method is adopted the screening must be inspected frequently and kept in perfect condition. In Jerusalem, where it is a requirement that wells and cisterns be closed, it is the practice of health officials to place oil in those wells or cisterns which the people have failed to cover tightly. This controls the mosquito breeding but renders the water distasteful although not entirely unfit for use.

Fish are used extensively in the tropics to control the breeding of the yellow fever mosquito in cisterns and even smaller containers of water. Since the choice of a suitable species of larviparous fish depends largely on geographic location, depth of well and various other factors, reference should be made to the following pamphlets:

Hildebrand, S. F.: The Study of the Top-Minnow in Its Relation to Mosquito Control, U. S. Pub. Health Bull. 153, 1925.
The Use of Fish for Mosquito Control, International Health Board of the Rockefeller Foundation, 1924.

The use of borax (2½ ounces to a gallon of water) in unused wells will prevent mosquito breeding for a long period of time. The well must, however, be completely cleaned of the borax before the water from it can again be used for drinking purposes.

NARCOSIS FROM CARBONA

To the Editor:—What is the percentage of carbon tetrachloride in the commercial cleaning fluid "Carbona"? I have available certain clinical data concerning an alcoholic addict who culminated a drinking bout by erroneously imbibing about an ounce of Carbona. He developed severe involvement of the liver, kidneys, gastro-intestinal tract and central nervous system. There were also scattered hemorrhages. He recovered. Does this case have sufficient interest to warrant a clinical report in THE JOURNAL? Please omit name. M.D., New York.

ANSWER.—Carbona is essentially commercial carbon tetrachloride. "Carbon tetrachloride has been tried as a general anesthetic; its toxicity is twice that of chloroform, and it is not satisfactory as an anesthetic. The presence of carbon disulphide greatly increases the toxicity when inhaled. (Of more recent years, pure carbon tetrachloride has been used internally in the treatment of hookworm disease.) The vapor has caused serious poisoning of a narcotic nature, particularly in rubber factories. In England it has been tried as a 'dry' shampoo, but its use for that purpose has not been unattended by danger, and deaths due to its action have been reported (London Letter, THE JOURNAL, July 31, 1909, p. 392). The pharmacologic actions of carbon tetrachloride are much like those of chloroform. In industrial poisoning from inhalation, carbon tetrachloride has, as its chief symptoms, circulatory disturbances, pallor, headache, nausea and excitement" (THE JOURNAL, Aug. 9, 1924, p. 461). Carbona inhalations to produce narcosis were first brought to THE JOURNAL'S attention by a correspondent in 1924. The observation of this correspondent was confirmed by another correspondent pointing out a "new amusement, known as the 'Carbona jag,' which was in vogue among a certain group of young people" (THE JOURNAL, Aug. 30, 1924, p. 705). Subsequently Dr. McClellan of Xenia, Ohio, pointed out that he had come across an addict to Carbona (THE JOURNAL, Sept. 27, 1924, p. 1022).

TRACHOMA AND VERNAL CATARRH

To the Editor:—The younger of two brothers visited Arizona on two occasions and while there played much with some Mexican children. A year later it was discovered that he had "trachoma" and he has been under treatment now for about a year. His older brother and two cousins also caught the same trouble. Their lids show quite typical papillary hypertrophy along the upper border and at the ends of the tarsal cartilages. The younger brother now has a rather extensive area on each upper lid, which is slightly raised, fairly smooth and looks like thick scar tissue. Elsewhere there is fine papillary hypertrophy of the conjunctiva. The cornea is clear; the bulbar conjunctiva is also free from definite irritation. There is a rather thick viscid yellowish white secretion in both eyes, which shows many eosinophils. Hence the question of vernal catarrh arises. Are eosinophils diagnostic of vernal catarrh or may they be found in a trachomatous discharge? Does trachoma ever turn into vernal catarrh? May the two diseases exist together? A diagnosis of vernal catarrh might easily be made in the case of the younger brother, but the older brother and the cousins have a lid condition which is quite definitely a light trachoma or a severe chronic catarrhal conjunctivitis.

DENNIS V. SMITH, M.D., Long Beach, Calif.

ANSWER.—The history of contact in the younger brother as well as in the older brother and the two cousins is extremely suggestive of a trachomatous nature of the condition. From the clinical description, it might be a mild trachoma, vernal conjunctivitis or chronic follicular conjunctivitis. But the viscid yellowish white secretion containing many eosinophils speaks most strongly for vernal conjunctivitis. The localized eosinophilia is supposed by many to be pathognomonic of vernal conjunctivitis, but undoubtedly eosinophils are to be found in the secretion in other conditions. Trachoma never "turns into" vernal conjunctivitis. The coexistence of the two conditions is possible but has apparently never been reported.

AMMONIUM CHLORIDE IN TREATMENT OF COUGHING

To the Editor:—In the special article on "Treatment of Coughing" published in THE JOURNAL, April 25, appears the following statement: "Ammonium chloride is frequently used in the form of troches but its exact mode of action is not known. . . . The treatment of the cough of acute bronchitis is directed to the increase of bronchial secretion when it is scanty, to its liquefaction when it is thick and tenacious, to lessening secretion when it becomes excessive, and to depressing the center when coughing has become injurious in spite of other measures." To meet these four indications, the remedies proposed are (1) nauseants (ipecac and antimony) and the steam inhalations with compound tincture of benzoin, (2) potassium or sodium iodide to liquefy thick tenacious sputum, (3) atropine to lessen secretion and (4) codeine to depress the center. Having used ammonium chloride in the treatment of coughing for the past twenty-five years and relying on it more than any other drug, I am led to inquire as to just how much reliance is to be placed on Dr. Hatcher's slighting reference to its usefulness. Is it possible that the teachings of your own "Handbook of Therapy" are erroneous? Can it be that our confidence in Osler, Stevens and Cecil has been misplaced? Should we now throw ammonium chloride into the discard in the treatment of acute bronchitis? Please omit name and address. M.D., Maine.

ANSWER.—The statement is correct as far as evidence from animal experimentation is concerned. Unfortunately, an anesthetized animal with an operatively exposed bronchial mucous membrane that is not the seat of a bronchitis is not a suitable object for the study of this question. An attempt to approach it from a clinical standpoint has been made by Warren Coleman (The Expectorant Action of Ammonium Chloride, *Am. J. M. Sc.* **152**:569 [Oct.] 1916), who determined on seven patients suffering from bronchitis that ammonium chloride as such is secreted by the bronchial mucous membrane in considerable concentration, much greater, for instance, than in the saliva; and he concludes from his studies that it probably acts by increasing the water of secretion and softening the mucus. Though the number of such carefully studied observations is rather limited, the results agree so well with innumerable clinical observations that one may assume this to be at least one of its modes of action. It must, however, be admitted that exact and proved knowledge regarding this so commonly used medicament is not nearly as complete as may well be desired.

POSSIBLE DIAGNOSIS OF DIABETES

To the Editor:—A woman, aged 45, who lived under a great nervous strain for several years, culminating in separation from her husband two years ago, has since then been slowly recovering her health but still has trouble with insomnia and feels extremely exhausted every morning, becoming more "peppy" in the afternoons and feeling pretty well in the evenings. The basal metabolic rate has been normal on several tests. As a slight change of color to greenish appeared in the Benedict test on

several occasions, a blood sugar test was made which showed 108 mg. per hundred cubic centimeters. Finally a dextrose tolerance test was made, which resulted as follows:

Fasting blood sugar, 96.6.
Urine negative to Benedict test but very slightly positive for sugar by the fermentation test.
Blood sugar one-half hour after dextrose was given, 181.6.
Urine: a trace of sugar by Benedict test.
Blood sugar one hour after the dextrose, 123.5.
Urine negative to the Benedict test.
Blood sugar one and one-half hours after the dextrose, 117.6.
Urine negative to the Benedict test.
Blood sugar two hours after the dextrose, 117.6.
Urine negative to Benedict test.

Do you consider that this patient shows any tendency to diabetes? What advice would you give her? H. M. METCALF, M.D., Elyria, Ohio.

ANSWER.—This dextrose tolerance test must be considered perfectly normal and would certainly not warrant the diagnosis of diabetes mellitus. Whatever may be the cause of the symptoms, there is not enough here to treat the patient as diabetic.

SYPHILIS WITH HYPERTHYROIDISM

To the Editor:—I have a patient, a woman, aged 30, who for the past ten years has had exophthalmia and progressive thyroid enlargement. All classic symptoms of a toxic type are present. The blood Wassermann test is 4 plus with a history of contact four months before. Would an intensive neoarsphenamine and mercury course be contraindicated? If so, what course of treatment do you think it wise to follow? Kindly omit name. M.D., New York.

ANSWER.—The patient will probably tolerate intensive antisyphilitic treatment rather poorly and for that reason moderation in dosage and a proper selection of drugs will be particularly important and the thyroid condition should have early operative attention if indicated by the basal metabolic rate and other observations.

The course that would probably be best tolerated would consist of neoarsphenamine, from 0.3 to 0.45 Gm. every fifth to seventh day, with the simultaneous administration of a bismuth compound (bismuth salicylate should be satisfactory) in the full therapeutic dose for a series of not less than twenty injections. The question of a rest period at the end of this time would depend largely on the patient's response and thyroid condition. If possible, treatment should be carried on with one drug or the other continuously through a period of at least a year. A spinal fluid examination should be made within six months in order that account may be taken of any abnormalities that would not respond to a milder type of treatment, such as the one suggested. Iodides should not be used in this type of patient except as indicated by the thyroid condition, and every effort should be made to deal with the thyroid problem as a complication as promptly as possible.

ULTRAVIOLET RADIATION AND TANNING

To the Editor:—Will you be kind enough to give me what information you have on the following subject: We have had some 200 children who attend Dowling School under more or less constant ultraviolet lamp treatment. These children are divided into 75 per cent orthopedic and 25 per cent cardiac cripples. It has been my impression that ultraviolet therapy is of considerable advantage, especially in those children who have a low-grade fever; but for some reason we have been unable to obtain a recognizable tan on any of these children. We have had our lamps tested repeatedly and have been informed that they are active. The question of buying a new lamp is now up for consideration. We hesitate to suggest the spending of this additional money unless we are convinced that this treatment is doing some good. Any information you can give on this subject will be helpful. Are these children being benefited from this therapy even though they are not tanning? We are giving them sufficient time under the lamp, as much as forty minutes in some cases, and we are treating them often enough so that some of them at least should be tanned. M. J. SHAPIRO, M.D., Minneapolis.

ANSWER.—Tanning has not been proved to be an index of benefit derived from light. Clinical response frequently occurs without any evidence of tanning. Perhaps these children will not respond with tanning regardless of the intensity of light emitted by the lamp. The benefit accruing to the children must be determined by careful study, without regard to the question of the presence or absence of pigment.

TREATMENT AND PROPHYLAXIS OF SYPHILIS

To the Editor:—1. What are the indications for treatment of a woman who has been constantly exposed to primary and secondary syphilis without herself showing evidence of the infection? 2. A woman, aged 46, with a persistent hypertension of 190, most likely a case of arteriosclerosis, was constantly exposed to an active, primary and secondary syphilis. She was given for prophylactic purposes two intravenous injections of neoarsphenamine, 0.45 Gm., at a seven day interval. After the second injection, she showed a severe reaction, as a rapid fall of pressure, 110, with heavy albuminuria, weakness, anorexia, and a macular rash all over the body, which lasted a few days. She recovered after weeks of rest in bed, and stimulation. Three weeks after the second injection, a blood Wassermann test showed 3 plus. In view of her apparent severe reaction to even small doses of arsenical preparations, what would be your suggestion as to further procedure in this patient's case? Kindly omit name. M.D., New York.

ANSWER.—1. In view of the long exposure, with the possibility of infection having occurred some time before treatment is begun, the proper procedure would be to treat as is indicated for serologically negative primary syphilis: a course of one of the arsphenamines, followed by a short course of bismuth or mercury therapy and iodides, then another arsphenamine course, followed by a longer course of bismuth or mercury therapy. At least three such series should be given, with frequent clinical and serologic examinations. If the patient remains free from all signs of syphilis, a spinal examination can be made; and if this also is negative, treatment can be suspended. The patient should be examined clinically and serologically at regular intervals for the next year, with another examination of the spinal fluid before release. If symptoms of syphilis, clinical or serologic, are found, the case is treated as any other recurrent syphilis.

2. The prophylactic treatment was correct. The three plus Wassermann reaction is a weak one and could possibly have been caused by the liver disturbance accompanying the severe reaction. If it grows stronger on repetition and is corroborated by a positive Kahn test, it must be accepted as evidence of syphilis. A course of bismuth or mercury therapy, with iodides at least part of the time, should be tried, with careful watch of the emunctories, gums, blood pressure, skin and hemoglobin. Longer rest periods than the two weeks given ordinary cases will probably be necessary. The serum should be tested about once in two or three months, and the patient warned not to expect a quick reversal of the reactions. As soon as possible a spinal fluid examination should be made. Mercury should be given as rubs or injections of the soluble salts. Treatment of the hypertension is important. If the weak positive Wassermann reaction does not persist and the Kahn test is negative, the patient should be watched clinically and serologically for at least four months without further treatment. If the reactions are wholly negative, the patient may be then assumed to have escaped infection.

LOSS OF DECIDUOUS TEETH AND JAW FORMATION

To the Editor:—I have a small patient, aged 13½ months, who recently in an accident lost both upper central and one lateral incisor teeth. Healing has taken place satisfactorily but I wish to obtain information on the following points: What will be the effect on the development of his upper jaw? If the loss of these teeth will tend to decrease the development, would it not be advisable to try to overcome this by a bridge or other appliance? This is the first and only child and the parents are greatly worried. Please omit name. M.D., California.

ANSWER.—The loss of deciduous teeth is not likely to have any influence on the development of the jaw. The development and eruption of the permanent teeth are the factors that determine growth of the jaw. The permanent teeth will probably erupt in the proper position, and the only disagreeable phase of the case will be the absence of teeth until the child is about 6 years old.

ISOLATION IN CONGENITAL SYPHILIS

To the Editor:—Is it generally considered necessary to use isolation in a case of hereditary syphilis in a baby 4 months of age? Snuffles are present, but no open lesions can be found. What type of isolation, if any, do you advise? Please omit name and address. M.D., South Carolina.

ANSWER.—The control of infectiousness in practically all patients who are able to take an arsphenamine is so simple and usually so prompt that prolonged isolation is no longer necessary. In the case of the baby with snuffles and a prenatal infection, the use of ordinary infectious precautions in handling the child should not be necessary for more than a week under either sulpharsphenamine or bismarsen treatment. To make it safe, perhaps ten days of precautions should be allowed. As the vast majority of such children are treatable with one or the other of these arsphenamines, the problem should be greatly simplified. While children with prenatal syphilis and open lesions are, of course, in theory at least, infectious, examples of transmission of the disease by this means are probably not common. If the mother, who of course has the infection, even though she shows no signs, can take entire charge of the child, a hospital isolation is unnecessary.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 8. Sec., Dr. Harry C. DeVighne, Juneau.

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Denver, July 23. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

CONNECTICUT: *Regular* (endorsement), Hartford, July 28. Sec., Dr. Thomas P. Murdock, 147 West Main St., Meriden.

NEVADA: Reciprocity: Carson City, Aug. 3. Sec., Dr. Edward E. Hamer, Carson City.

PORTO RICO: San Juan, Sept. 1. Sec., Dr. Diego Biascoechea, P. O. Box 804, San Juan.

California February Examination

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports the written examination held at Los Angeles, Feb. 2-5, 1931. The examination covered 9 subjects and included 90 questions. An average of 75 per cent was required to pass. Sixty-nine candidates were examined, 64 of whom passed and 5 failed. The following colleges were represented:

PASSED		
College	Year Grad.	Number Passed
College of Medical Evangelists	(1930, 3)	3
University of Colorado School of Medicine	(1930, 3)	3
Northwestern University Medical School	(1931, 9)	9
Rush Medical College	(1921), (1930, 4)	5
University of Illinois College of Medicine	(1927), (1928)	2
State University of Iowa College of Medicine	(1928)	1
University of Louisville School of Medicine	(1929)	1
Tulane University of Louisiana School of Medicine	(1930)	1
Johns Hopkins University School of Medicine	(1919), (1930)	2
Harvard University Medical School	(1929), (1930)	2
University of Michigan Medical School	(1927), (1930)	2
University of Minnesota Medical School	(1930),* (1930)	2
St. Louis University School of Medicine	(1930, 7)	7
Creighton University School of Medicine	(1930, 2)	2
University of Nebraska College of Medicine	(1928)	1
Syracuse University College of Medicine	(1930)	1
University of Oregon Medical School	(1929), (1930, 3)	4
Hahnemann Medical Coll. and Hosp. of Philadelphia	(1930)	1
Jefferson Medical College of Philadelphia	(1929), (1930)	2
Univ. of Pennsylvania School of Med.	(1928), (1929), (1930)	3
University of Toronto Faculty of Medicine	(1930)	1
Queen's University Faculty of Medicine	(1921)	1
McGill University Faculty of Medicine	(1930, 2)	2
Member and Licentiate of the Royal Coll. of Phys., London, and the Royal Coll. of Surgs., England	(1921)	1
University of Kiel Faculty of Medicine	(1921)†	1
School of Medicine and Pharmacy of Guadalajara	(1921)	1
University of Edinburgh Faculty of Medicine	(1930)	1
University of Glasgow Medical Faculty	(1930)†	1
University of Tomsk Faculty of Medicine	(1911)†	1

FAILED		
College	Year Grad.	Number Failed
College of Medical Evangelists	(1930)	1
Emory University School of Medicine	(1925)	1
Medical Faculty of Trinity University, Toronto	(1904)	1
Laval University Medical Faculty	(1912)	1
Royal University of Naples Faculty of Med. and Surg.	(1916)†	1

* This applicant has received an M.B. degree and will receive an M.D. degree on completion of one year's internship in a hospital.

† Verification of graduation in process.

Dr. Pinkham also reports 45 physicians licensed by reciprocity with other states and 2 by the endorsement of credentials from Jan. 29 to March 30, 1931. The following colleges were represented:

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
University of Colorado School of Medicine	(1926)	Colorado
George Washington University Medical School	(1917)	Dis. Colum.
Chicago College of Medicine and Surgery	(1916)	Illinois
Northwestern University Medical School	(1896), (1918) (1906) Utah	Illinois
Rush Medical College	(1881) Kansas, (1908) (1914) Utah, (1923) New York	Illinois
State University of Iowa College of Medicine	(1910)	Iowa
University of Louisville School of Medicine	(1910)	Illinois
Tulane University of Louisiana School of Medicine	(1916)	Texas
Johns Hopkins University School of Medicine	(1904)	Ohio
Boston University School of Medicine	(1919)	Oklahoma
Harvard University Medical School	(1917)	Utah
University of Michigan Medical School	(1925, 2)	Michigan
University of Minnesota Medical School	(1927)	Minnesota
Ensworth Medical College	(1913)	Iowa
St. Louis University School of Medicine	(1908)	Illinois
Creighton University School of Medicine	(1914)	Utah
University of Nebraska College of Medicine	(1918), (1925) (1928) Washington	Nebraska
University & Bellevue Hospital Medical College	(1928)	New York
Ohio State University College of Medicine	(1915)	Ohio
Ohio State University College of Homeopathic Med.	(1918)	Ohio
University of Cincinnati College of Medicine	(1924), (1928)	Ohio
University of Oklahoma School of Medicine	(1929)	Oklahoma
University of Oregon Medical School	(1901), (1925) (1911) Washington	Oregon
Jefferson Medical College of Philadelphia	(1893)	Minnesota
University of Pennsylvania School of Medicine	(1912) (1919) Utah	Penna.
Vanderbilt University School of Medicine	(1926)	Tennessee
Baylor University College of Medicine	(1928)	Texas
University of Texas School of Medicine	(1915)	Texas
Milwaukee Medical College	(1911)	Wisconsin
University of Manitoba Faculty of Medicine	(1917)	Illinois
Medical Faculty of Trinity University, Toronto	(1890)	Oregon
McGill Univ. Faculty of Med.	(1907) Washington, (1915)	S. Dakota

ENDORSEMENT OF CREDENTIALS		
College	Year Grad.	Endorsement of
Harvard University Medical School	(1926)	N. B. M. Ex.
Creighton University School of Medicine	(1917)	U. S. Navy

Book Notices

THE INTRODUCTION AND SPREAD OF THE FISH TAPEWORM (DIPHYLLOBOTHRIUM LATUM) IN THE UNITED STATES. By Henry B. Ward, Professor of Zoology, University of Illinois. De Lamar Lectures, 1929-1930. Paper. Pp. 36. Baltimore: Williams & Wilkins Company, 1930.

This lecture presents in a brief form and with a minimum of technical terms the main outlines of our present knowledge relating to the introduction of the fish tapeworm into the United States and its spread. Necessarily a considerable proportion of the facts presented have been gleaned from a diligent search of the literature. These facts have been carefully analyzed and interpreted, and herein lies one of the principal values of this pamphlet. In addition to the review of the literature, Professor Ward has summarized the contributions made by himself and his co-workers. In the section on introduction into North America, page 9, attention is called to Weinland's long ignored report of the finding of this tapeworm in 1858, some twenty years before Leidy's first published report. Ward justly gives the credit for the first correct estimate of the situation with respect to this parasite in this country to Warthin, who in 1912 published an account of the broad tapeworm in upper Michigan together with a keen analysis of the factors there in operation which would result in an endemic condition.

One of the most important sections is devoted to the origin of native cases, pages 16-18. As a result of a study of immigration statistics, Ward concludes that the broad tapeworm had probably been established in North America even before the reports by Weinland and Leidy. This was accomplished then and later through the agency of immigrants from the circum-Baltic area. His analysis of statistics on immigration from those European countries which contain important endemic areas indicates that "50,000 cases have been contributing to the pollution of United States waters during a considerable part of half a century or more." It is to be regretted that this analysis did not also cover immigration into Canada, for Vergeer has shown that that country is the source of fully 80 per cent of those fish capable of carrying plerocercoids of *D. latum* that are sold in the United States. And he has further shown that fish from many Canadian lakes are actually infested. The problem, therefore, relates to North America rather than to the United States, although this country has provided the great majority of the reported human cases. There is, however, little evidence to show that the human cases in the United States are now contributing to any marked degree to the infestation of fish in the waters producing fish in commercial quantities, although it is probable that they did so in the past.

Ward properly stresses the importance of domesticated and wild carnivores as factors in the contamination of waters with eggs of *D. latum*, in the extension of its range, and in increasing the infection of primary and secondary hosts until the species has become thoroughly endemic. Vergeer in two papers published in 1929 had already called attention to the fact that these animals serving as reservoirs greatly complicate the problem of control of the broad tapeworm and practically remove all possibility of preventing the continued infection of fish in northern lakes.

In the discussion of the distribution and frequency of infected fish and the origin of new endemic foci, the danger of spreading this parasite through discharge of eggs in sewage from cities is perhaps stressed too much, since the bulk of the fish that can reasonably be suspected of carrying plerocercoids of *D. latum* do not originate in waters of the United States into which the sewage of cities is discharged. They come from thinly settled areas outside the United States where the principal contamina-

tion is from carnivores, fishermen and woodsmen. Lake Winnipeg, it is true, is contaminated by sewage from the city of Winnipeg.

The choice of South Bend, Ind., as a good example of the manner in which the broad tapeworm may become established is unfortunate, since there is no evidence that the fish of the St. Joseph River, which receives the sewage of South Bend, are infected. And no evidence has yet been adduced for the existence in the St. Joseph River of copepods that are susceptible of being infected. The known copepod hosts of *D. latum* occur in lakes, not in rivers. It is doubtful whether the heavy eggs of *D. latum* are carried far by water currents. They settle rapidly in quiet waters. This river has several dams in its course, which would probably prevent the movement of eggs and infected copepods (if such existed) out into Lake Michigan. None of the species of fish that are capable of carrying plerocercoids of *D. latum*, except burbot, are taken commercially in southern Lake Michigan. Nor is there, as yet, any evidence that infected fish are taken from the southern end of Lake Michigan, although the map on page 3 indicates that region as one from which infected fish have been taken.

Nevertheless, elsewhere in this paper Ward has well stated the series of conditions that must exist for the establishment of an endemic center for *D. latum*. Briefly, these conditions are a susceptible area characterized by fresh water lakes and streams carrying in reasonable abundance primary and secondary hosts suitable for the developmental stages of the parasite, a population naturally in contact with fish and their animals (or wild carnivores), an acquired racial custom or personal habit of eating uncooked fish, and the discharge of raw sewage into lakes and streams.

At two places, pages 4 and 20, it is incorrectly stated that Essex determined *Cyclops brevispinosus* and *C. prasinus* to be first intermediate hosts. A careful perusal of Essex's paper shows that only *Diaptomus oregonensis* was found to serve as a host.

The paper is useful and stimulating and deserves attention by a large public. Its faults are few and most of them are attributable to the limited space, which did not permit adequate discussion and qualification of statements.

LA CATATONIE EXPÉRIMENTALE PAR LA BULBOCAPNINE: ÉTUDE PHYSIOLOGIQUE ET CLINIQUE. Par H. de Jong, neurologiste et psychiatre à Amsterdam, et H. Baruk, chef de clinique psychiatrique à la Faculté de médecine de Paris. Paper. Price, 40 francs. Pp. 136, with 38 illustrations. Paris: Masson & Cie, 1930.

This interesting monograph has a preface by H. Claude and B. Brouwer, who call attention to its importance. De Jong and Baruk discuss their results and opinions based on their individual work and that combined with other workers. Following an introduction which forecasts the contents of the monograph, the authors describe the chemistry of bulbocapnine, an alkaloid derived from a species of *Corydalis, Corydalis cava*, or bulbocapnus cavum, which has a chemical similarity to apomorphine. In 1904 Peters observed the immobilizing action of this drug. In 1921 de Jong, following some plethysmographic studies in catatonia in man, began his experiments on this drug. The authors then discuss the physiology of the drug and report on its action on medullary, decerebrated, thalamic, striate and normal animals; animals without a neocortex, as fish, frogs and reptiles; animals with a rudimentary neocortex, as fowl; and animals with a developed neocortex, as mammals. They conclude that, although bulbocapnine acts on the whole nervous system, its action in producing catatonia appears for the most part in animals with a developed and intact neocortex. They compare the catatonia resulting from bulbocapnine in animals with that of man suffering from catatonia, and discuss the pathogenesis of the syndrome. They point out similarities not only from the motor side, consisting of catatonia, catalepsy and negativism, but also from the vegetative side, respiration and salivation. The relation of catatonia to sleep and epilepsy is discussed, and a theory of discharge from the motor cells is developed to explain the disturbed physiology of these cells. The monograph is important in that it makes the collected data on this interesting drug easily available. It suggests many attractive speculations in reference to catatonia and opens a field of research that may result in important discoveries. The book is well illustrated, portraying the remarkable motor effect of this drug.

A MANUAL OF THE COMMON CONTAGIOUS DISEASES. By Philip Moen Stimson, A.B., M.D., Associate in Pediatrics, Cornell University Medical College. Cloth. Price, $3.75. Pp. 353, with 42 illustrations. Philadelphia: Lea & Febiger, 1931.

In this book is found a clear discussion of the common contagious diseases, preceded by remarks on the principles of contagion and serum reactions. Among the diseases discussed is Vincent's angina. The management of the contagious diseases in the home, in day schools and in boarding schools is also outlined. Consequently, the book has additional value for the school physician. The material is clearly and concisely presented and conforms to recognized modern practices.

DIE HORMONE DES OVARIUMS UND DES HYPOPHYSENVORDERLAPPENS: UNTERSUCHUNGEN ZUR BIOLOGIE UND KLINIK DER WEIBLICHEN GENITALFUNKTION. Von Dr. Bernhard Zondek, a. o. Professor für Geburtshilfe und Gynäkologie an der Universität Berlin. Mit einem Anhang: Die hormonale Schwangerschaftsreaktion aus dem Harn bei Mensch und Tier. Paper. Price, 38 marks. Pp. 343, with 121 illustrations. Berlin: Julius Springer, 1931.

This book is a compilation of all the work which Zondek and his co-workers have done in the field of endocrinology; it contains data not published heretofore. The contributions which the author has made, in collaboration chiefly with Aschheim, represent one of the greatest practical advances made in the field of obstetrics and gynecology. The author began his studies on the hormones of the ovaries and the hypophysis in 1913 and has persistently carried on his research. The culmination of this work is undoubtedly the Aschheim-Zondek test for pregnancy, which has proved to be reliable in at least 98 per cent of all the cases examined. This test is now being used all over the civilized world and the author gives a list of 4,315 cases in which the test was used by twenty-nine individuals. Aschheim and Zondek themselves performed 1,200 of these tests, and in the total of 5,515 cases the proportion of error was only from 1 to 2 per cent. The investigations of the author have also shown that the control of the growth, development and changes in the uterus are due not to the ovaries but to the pituitary gland. Because of this, Zondek calls the hypophysis the "motor of the ovaries" and "motor of the sexual function." However, P. Smith in our country was the first to show that the hypophysis was the controlling organ. The author also found that the urine of pregnant horses contains ten times more folliculin per liter than can be obtained from the urine of a pregnant woman. Hence one horse kept under observation for 250 out of the 320 days of gestation can yield as much folliculin as can ordinarily be obtained from 1,500 pregnant women under observation in a hospital. The book is abundantly and beautifully illustrated and the typography is excellent. The language is clear and greatly simplifies the reading of the book, which should be in the hands of every obstetrician, gynecologist and endocrinologist.

ON THE ACTION OF COD LIVER OIL AND IRRADIATED PREPARATIONS IN RICKETS. By Professor E. Poulsson, M.D. Paper. Pp. 16. Oslo: State Vitamin Institute [n. d.].

In this brief and comprehensive monograph, the author details the isolation of ergosterol, the process of activation and comparative clinical researches. The author points out that the ergosterol used today is still not in pure form, although up to the present it is the only known substance that can be irradiated. He emphasizes that, besides the varying purity and quality of ergosterol in their relation to vitamin D content after irradiation, under and over irradiation are important factors in the antirachitic value of the finished products. As the result of these varying factors the products can be evaluated only on a biologic standardization in experimental rat rickets. The remainder of the monograph is devoted to quotations from various authors who have made comparative human and chicken studies with cod liver oil, irradiated ergosterol (viosterol) and combinations of the two. The author believes that many more D units as represented in irradiated ergosterol are necessary for prophylaxis and cure. He ascribes this to a lack of A and possibly other substances contained in cod liver oil. Experiences with various cod liver oils has shown them to vary greatly in their curative value and the same holds true with irradiated ergosterol and combinations of them. There is much to be hoped for from improvement in methods of preparation and standardization of both products through international agreement.

PRÉCIS DE PATHOLOGIE MÉDICALE. TOME III: MALADIES DE L'APPAREIL RESPIRATOIRE. Par Fernand Bezançon, professeur de clinique médicale à la Faculté de médecine de Paris et S.-I. De Jong, médecin des Hôpitaux de Paris. Avec la collaboration du Docteur André Bloch pour l'oto-rhino-laryngologie. Second edition. Cloth. Price, 70 francs. Pp. 747, with illustrations. Paris: Masson & Cie, 1931.

PRÉCIS DE PATHOLOGIE MÉDICALE. TOME IV: CŒUR. Par M. A. Clerc, professeur à la Faculté de médecine de Paris. Vaisseaux. Par M. A. Clerc et Noel Deschamps, assistant de consultation de cardiologie à l'Hôpital Lariboisière. Cloth. Price, 100 francs. Pp. 1298, with illustrations. Paris: Masson & Cie, 1931.

The series "Pathologie médicale" is intended to fill the place once so acceptably occupied by Dieulafoy's four volumes. The preface states that the aim is to offer a work that will fit in between the larger didactic treatises and the smaller quiz-compends. By omission of many details and of confusing theory it is hoped that the reader will be furnished with the established essentials of medicine. The needs of the undergraduate and of the busy practitioner are especially kept in mind by the authors. The specialist will consult larger works, monographs and original articles. Viewed in this light, the two volumes may be commended. They fulfil their purpose. Clinical features of disease are clearly yet briefly set forth; etiology and pathology are given due consideration; treatment is reasonably full.

DIE TECHNIK DES UNGEPOLSTERTEN GIPSVERBANDES. Von Dr. Fritz Schnek, Oberarzt des Unfallkrankenhauses, Wien. Mit einem Geleitwort von Dozent Dr. Lorenz Böhler, Leiter des Unfallkrankenhauses in Wien. Cloth. Price, 15 marks. Pp. 165, with 169 illustrations. Vienna: Wilhelm Maudrich, 1931.

The author describes the indications for plaster-of-paris bandages and discusses the disadvantages of the usual technic of applying plaster over thickly padded parts of the body. He shows a number of pictures of ulcers and even of gangrene that have developed following the application of thickly padded plaster-of-paris casts. The technic of the unpadded plaster bandage is discussed, with descriptions of the various types of material and plaster that should be used. A careful description of the technic of applying the unpadded plaster-of-paris bandages directly on the skin is given, with especial attention to the lower extremity. The importance of extending the bandage to the periphery of the soft parts is noted. Most of the bandages on the extremities are first made into a wide bandage of several layers, which is then usually applied to the posterior of the lower extremity and the dorsum of the arm. This is carefully molded against the natural curves and cut partly across so that it will fold around the heel or the elbow. In some instances the posterior plaster is all that is necessary, but it is held firmly in place by an obliquely or circular loosely woven bandage. Usually two layers of paster-of-paris bandage are applied round the extremity for this purpose. In many of the fractures of the lower extremity the author applies an iron to the cast so that the patient walks on it; in others the patient is permitted to walk on the plaster bandage. This is possible by careful application of the plaster to the extremity so that the bony prominences support the body and the cast takes the weight off the fractured or injured parts. Lateral reinforcements are frequently necessary because of the small amount of plaster used. This technic of applying plaster-of-paris bandages so that the part is protected from all motion or strain is not limited to fractures but is used in acute and chronic infections and injuries to the soft parts.

Detailed directions are given for applying plaster-of-paris bandages for various types of injuries to the extremities and to the pelvis and vertebrae. It is well to note that the author uses padding about the pelvis and upper end of the thigh in applying a spica. Some padding is also used on the chest. Careful fitting of the plaster round the bony prominence is not interfered with by these pads. Walking on a spica about the hip may be done with a limited amount of support. The methods of producing hyperextension of the vertebrae for fractures of the spine are simple and practical. The author mentions the dangers of improperly applying the unpadded plaster, particularly following fresh fractures, and advises practice on the older injuries and ones having little swelling.

Thos book emphasizes the fundamentals and the finer details of applying a plaster-of-paris bandage, details not found in the majority of textbooks. It is evident that, following correct principles and having the proper material, it is possible to apply a plaster bandage on the extremities with no padding and with a minimum amount on the trunk. Occasionally, traction nails penetrating the bone above and below the fracture points are embedded in the cast. Many objections to the use of padding are illustrated by obviously improperly applied padding and casts so that they are unconvincing. In addition, the author uses well placed padding about the trunk and shows illustrations of the use of heavily padded abduction splints about the shoulder which indicate that a minimum of properly applied padding is a wise protection, especially when the plaster of paris is applied by the general profession. The author leaves one with a feeling that in spite of the objections to padding it should rarely be entirely omitted, even by the experienced surgeon, until he has thoroughly mastered the art of applying plaster of paris. However, the fundamental principles advocated should be followed by all.

CHILD HEALTH. By Mrs. Norma Selbert, R.N., B.S., M.A., College of Medicine of the Ohio State University. Cloth. Price, $1.60. Pp. 261, with 49 illustrations. Philadelphia: W. B. Saunders Company, 1931.

With the growing interest in child health has come a multitude of books written in nontechnical language for parents, teachers and students on the various phases of child care. The efficacy of such books is determined by their simplicity of style, interest and accuracy. In this book are discussed some of the physical and social problems affecting the child's growth, the care of the child, and the child in high school. There is also some material concerning health problems in college and the working child. Occasionally the author deviates from accepted practices of the present day. For example, she recommends the use of celluloid teething rings. She also states that during the bottle-feeding of the infant the nipple should be removed from the baby's mouth several times so as to allow air that may have collected in the nipple to escape. This is obviously not the reason for removing the nipple from the baby's mouth. There is also included a photograph of a 1 year old baby purporting to show the existence of modesty at this early age. It is evident that to bring the covering of the child's genitalia consciously to his attention will only serve to stimulate undue curiosity and interest. The author has appended bibliographic references, which increase the value of the book.

HÉLIOTHÉRAPIE, ACTINOTHÉRAPIE ET STÉROLS IRRADIÉS. Par P.-F. Armand-Delille, médecin de l'Hôpital Herold. Paper. Price, 32 francs. Pp. 192, with 84 illustrations. Paris: Masson & Cie, 1931.

The sudden increased interest in the subject of light therapy beginning with Rollier's contribution to heliotherapy and followed by the development of various types of ultraviolet ray lamps makes a plain statement by such an authority as Armand-Delille particularly timely. He has divided the subject into two parts. The first portion deals at great length with heliotherapy, including the historical aspects of the subject, general indications for treatment and special indications, such as climate, geography and season. Definite directions in the application of sunlight are furnished by the author. Besides treating the topic of tuberculosis as a whole, he discusses the clinical types separately. There is a section on treatment of rickets, pregnancy, skin disorders, infantile asthma and debilitated infants. The rôle of different types of open air schools and sun schools is elaborated in a valuable chapter on the normal child. The second and shorter part of the book deals with the application of actinotherapy from artificial sources, and the rôle of irradiated substances. The latter agencies are made applicable to such conditions as rickets, spasmophilia, osteomalacia, pregnancy, asthma and certain skin and surgical conditions. Particular value lies in the definite descriptions concerning the actual routine of treatment and the discrimination between seashore, mountain and desert sanatoriums. For the French there is a valuable table of resorts and their advantages. An obvious misprint ascribes the year 1824 instead of 1924 to Hess's discovery of the irradiating qualities of inherently inert substances. In the same sentence there is the obvious misunderstanding that Steenbock did his work in England instead of Madison in the state of Wisconsin. The monograph is unusually readable, and the photographs are illuminating.

Medicolegal

Liability of Hospital for Surgeon's Negligence

(Penland v. French Broad Hospital, Inc. (N. C.), 154 S. E. 406)

An appendectomy was performed on one of the plaintiffs, in a hospital operated for profit by the defendant hospital corporation. The corporation undertook to provide facilities for performing the operation and for treatment during recovery. It did not undertake to furnish a surgeon to perform the operation or to care for the patient after it. During and after the operation the patient was under the care and treatment of physicians and surgeons chosen and employed by her husband or, at his request, by her physician. The surgeon thus chosen to operate was, it is true, a member of the hospital staff and a stockholder and officer of the corporation. Gauze was inadvertently left in the operation wound. When the patient and her husband discovered that fact they sued the corporation, the owner of the hospital. Judgments were rendered in their favor. The defendant thereupon appealed to the Supreme Court of South Carolina.

Conceding that evidence was adduced from which the jury might have inferred that the surgeon who operated negligently permitted gauze to remain in the wound, said the Supreme Court, there was no evidence from which the jury could find that the defendant hospital corporation was liable for his negligence. The owner of a hospital, whether an individual, firm or corporation, is not liable for injuries resulting from a surgical operation or from treatment in the hospital, when the surgeon who performs the operation or the physician who treats the patient is employed by the patient or by some one other than the owner of the hospital, and the injuries result from the negligence of such surgeon or physician. The owner of the hospital, when it is conducted for gain and not for charitable purposes, is liable for only such damages as accrue from the injuries caused by the owner's own negligence, or by the negligence of his agents, servants or employees, each within the scope of his own employment. If the surgeon employed by a patient or on his behalf is not an employee of the owner of the hospital, the owner is not liable for the negligence of that surgeon. This is true even though the surgeon happens to be an officer and stockholder of the corporation by which the hospital is owned. 30 C. J. 467: *Barfield* v. *South Highlands Infirmary*, 191 Ala. 553, 68 So. 30.

Malpractice and Workmen's Compensation Acts

(Roman v. Smith et al. (U. S. D. C.), 42 Fed. (2d) 931)

The defendants Smith and Werlich owned and operated a hospital. They contracted with the Callahan Zinc and Lead Company to provide treatment and hospital accommodations for its employees. Roman, an employee, fractured his left femur in the course of his employment and was taken to the defendants' hospital. There he was placed under the care of an employee, Horsky. Roman claimed that he was injured by Horsky's unskilfulness and carelessness. On the basis of that alleged injury he brought suit in the United States District Court, District of Idaho, Northern Division, against the proprietors and managers of the hospital and against the Hartford Accident and Indemnity Company as surety for his employer under the provisions of the workmen's compensation act.

The Idaho workmen's compensation act provides, among other things:

> When an injury for which compensation is payable under this chapter shall have been sustained under circumstances creating in some other person than the employer a legal liability to pay damages in respect thereto, the injured employee may, at his option, either claim compensation under this chapter or obtain damages from or proceed at law against such other person to recover damages; and if compensation is claimed and awarded under this chapter any employer having paid the compensation or having become liable therefor shall be subrogated to the rights of the injured employee to recover against that person: Provided, If the employer shall recover from such other person damages in excess of the compensation already paid or awarded to be paid under this chapter, then such excess shall be paid to the injured employee less the employer's expenses and costs of action.

Roman contended that the injury attributed by him to the attending physician's malpractice, for which he sought damages, was sustained, in the terms of the statute, "under circumstances creating in some other person than the employer a legal liability to pay damages," and that he therefore had the right to choose whether he would claim compensation under the act or proceed at law against the person alleged to be responsible for the injury. That contention, however, the court held to be erroneous, because the alleged injury from the malpractice of one of the defendant physicians was the proximate result of the original injury, and therefore the injured workman was limited by the workmen's compensation act to the compensation provided by it. An employee, said the court, may recover under the workmen's compensation act for an injury resulting from medical or surgical treatment, *without any intervening independent circumstance to break the chain of causation between the new injury and the original injury.* This rule, said the court, seems to apply even when the disability has been increased by the carelessness of the employer's physician. Where a workman meets with an accident and is taken to a hospital and placed under the care of the employer's physician, the workman is still in the course of his employment.

The injured workman pointed out that the defendant insurance company was surety of his employer and therefore stood in the same relation to him as his employer did. He complained because the insurer refused to bring suit for his benefit and to give him the right to maintain the action for the supposedly independent injury resulting from the alleged malpractice. But, said the court, when an employer pays compensation under the act, or becomes liable for it, and so takes over the right of the injured employee to recover damages from the person responsible for the injury, the right to recover becomes the personal right of the employer and is no longer the right of the employee. The attempt of the injured employee to require the insurance company to bring action was itself evidence that he had received compensation under the act, because the employer or the insurance company must first have paid compensation to the injured employee before the employer or the insurer could assert any right to bring action against the person responsible for the injury to the employee.

Workmen's Compensation Acts: Preexisting Disease and Compensation for Industrial Accidents.—There is nothing said in the Utah compensation act about protection being confined to the healthy employee. It is well recognized by the authorities that—

> It is the hazard of the employment acting upon the particular employee in this condition of health and not what that hazard would be if acting upon a healthy employee or upon the average employee.

Whatever predisposing pathologic condition in the nature of diseased arteries or excessive blood pressure may exist, if collapse is brought on by any strain or condition of the deceased's employment, it is compensable. Acceleration or aggravation of a preexisting disease is an injury in the occupation that causes it. The previous condition of the employee's health is the most material circumstance to be considered and weighed in ascertaining whether the injury resulted solely from the disease or from the disease plus the employment. The test to be applied is: Did the accident come from the disease alone, or did the employment contribute to it in any material degree?—*Grasteit v. Industrial Commission of Utah (Utah), 290 P. 764.*

Society Proceedings

COMING MEETINGS

Kentucky State Medical Association, Lexington, September 7-10. Dr. Arthur T. McCormack, 532 West Main Street, Louisville, Secretary.
National Medical Association, Atlanta, Ga., August 17-21. Dr. Walter G. Alexander, 136 West Kinney Street, Newark, N. J., Secretary.
Pacific Northwest Orthopedic Association, Vancouver, British Columbia, September 5. Dr. Charles McClure, 322 Alder Street, Portland, Ore., Secretary.
Utah State Medical Association, Salt Lake City, September 9-11. Dr. M. M. Critchlow, Boston Building, Salt Lake City, Secretary.
Washington State Medical Association, Aberdeen, August 3-5. Dr. Curtis H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.
Wisconsin, State Medical Society of, Madison, September 9-11. Mr. J. G. Crownhart, 119 East Washington Avenue, Madison, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

Annals of Surgery, Philadelphia

93: 961-1120 (May) 1931

Delayed and Nonunion in Fractures in Adult. C. R. Murray, New York.—p. 961.
*Fractures with Especial Reference to Hip, Ankle and Elbow. M. S. Henderson, Rochester, Minn.—p. 968.
*Malunion of Fractures of Femur. R. H. Patterson, New York.—p. 984.
*Ambulatory Treatment of Malleolar Fractures. A. Krida, New York.—p. 998.
*Fractures of Scapula. R. T. Findlay, New York.—p. 1001.
*Calcification in Callus Formation and Fracture Repair. R. M. Berg, Portland, Ore., and I. N. Kugelmass, New York.—p. 1009.
Surgical Management of Cranial Injuries. J. S. Rodman, Philadelphia.—p. 1017.
Apathetic Thyroidism. F. H. Lahey, Boston.—p. 1026.
Therapeutic Failures After Operation for Hyperthyroidism. J. Rogers, New York.—p. 1031.
*Results of Thyroidectomy: Analysis of One Hundred Cases. A. H. Noehren, Buffalo.—p. 1045.
*Bilateral Empyema of Pleural Cavities. E. L. Keyes, New York.—p. 1050.
Subcutaneous Rupture of Spleen: Two Cases with Blood Counts Following Splenectomy. H. J. Shelley, New York.—p. 1064.
*Intra-Abdominal Apoplexy. W. T. Green and J. H. Powers, Boston.—p. 1070.
Subphrenic Abscess. H. P. Brown, Jr., Philadelphia.—p. 1075.
Management of Patients with Gastric and Duodenal Ulcers. J. W. Hinton, New York.—p. 1082.
Duodenojejunostomy as Substitute for Gastro-Enterostomy in Certain Cases of Duodenal and Gastric Ulcer and Apparent Obstruction of Stomach. A. G. Brenizer, Charlotte, N. C.—p. 1086.

Fractures of Hip, Ankle and Elbow.—Henderson holds no preference either for the closed or for the open method of treatment of fractures but adapts the method to the fracture under consideration. If the operative open method is to be used, it should be carried out at once and not after reduction has been attempted by vigorous manipulations. He has long abandoned the view that the operative method should be used only after conservative efforts have failed. On the other hand, he is also far from the point of advising operative intervention for all fractures.

Malunion of Fractures of Femur.—Patterson believes that 80 per cent of the cases of malunion of fractures of the femur are preventable, being due to errors in treatment, usually changing treatment with slipping of fragments at the time. Twenty per cent of the cases of malunion of the femur are not preventable. Most of these cases are due to associated diseases or injuries. Excessive callus at the site of malunion is present in most cases. This may be an attempt of nature to repair and strengthen the deformity. The treatment in cases complicated by osteomyelitis, extensive loss of bone and associated injury of the soft parts, is apt to extend over many years with a doubtful end-result. Therefore, amputation is to be considered in such cases. The time element is a big factor in these cases. Treatment implies, first, refracture; second, prolonged treatment of the refracture (union nearly always slower in refracture cases); third, treatment of adjacent joints, muscles and tendons; fourth, often secondary operations, as tendon lengthening and stretching. All this may extend over a period of two years. Arthritis of one joint in the extremity (particularly the hip or knee) is apt, at times, to overshadow any good result one might get in the treatment of malunion. Spinal anesthesia should be considered in the operative treatment of these patients. Absorption of the neck of the femur with eventual solid union does occur occasionally.

Treatment of Malleolar Fractures.—Krida has for several years been impressed with the protracted disability which frequently occurs as the result of malleolar fractures, often with little or no displacement of the fragments. At the end of six weeks or two months the patient presents a foot in which the circulation is sluggish; there is more or less infiltration, a general restriction of motion in the joints of the ankle and tarsus, and atrophy of musculature. Roentgen examination reveals atrophy of bone. To prevent these symptoms the following treatment is recommended: If there is displacement requiring reduction, this is done, and a short period of rest is allowed; in fractures with no displacement this consists of two or three days' rest in a sheet-wadding-bandage compression dressing. Following this, adhesive plaster strapping is applied with the foot in dorsal flexion and adduction and with the toes in plantar flexion. The base of the dressing is two two-inch strips, which begin on the outer side of the leg, passing downward across the os calcis, adducting that bone, and then upward on the inner side of the leg to the upper border of the calf. Over this are applied successive two-inch strips, encircling the limb from the base of the toes to the upper border of the calf but leaving a small segment of the heel uncovered. The patient is then instructed to begin systematic movements at the ankle joint. In order to be assured that he uses his tibialis anticus muscle for dorsal flexion movements, he is instructed to keep his toes plantar flexed. The dressing sufficiently fixes the fragments so that no discomfort accompanies the exercise. Weight-bearing and walking in a shoe the heel of which has been raised one-fourth inch (0.6 cm.) on the inner side, are encouraged after from three to six days after the injury. The adhesive dressing is renewed every four or five days. This regimen of dressing is carried out for six weeks. Union is then sufficiently advanced so that no deformity will result. The raised heel is maintained; exercises and proper weight-bearing are encouraged until complete mobility is restored. During the last year the author has treated seven patients in this manner. All were walking in from three to seven days; the convalescence was materially shortened, and union occurred without delay or deformity.

Fractures of Scapula.—According to Findlay, fractures of the scapula usually follow great violence and as a rule are associated with other injuries. The associated injuries often interfere with any definite plan of treatment for the fractured scapula. However, it will be well to have some definite principles to bear in mind in order to avoid a too summary treatment of the fractured scapula just because the patient happens to have other more serious injuries. In most cases, treatment by closed methods is used.

Calcification in Fracture Repair.—Berg and Kugelmass studied the relation between callus formation and the amount and rate of calcification in rabbits with experimentally induced fractures. They noted that the greater the local fibrous tissue formation, the greater the amount and degree of calcification, all other conditions remaining the same. The blood calcium tends to be higher and the phosphate lower in the course of normal bone repair, and the more rapid the rate of calcification the more marked is this alteration in the calcium and phosphate content of the blood. Injection at the site of fracture of alkaline trypsin solution to produce fibrous dissolution markedly retarded bony union in comparison with the control series. Injection at the site of fracture of tissue fibrinogen solution to stimulate increased callus formation markedly accelerated bony union in comparison with the control series.

Results of Thyroidectomy.—Noehren states that, three months after operation in a series of 100 consecutive thyroidectomies, 93 per cent of the patients reported either satisfactory improvement or complete cure. This percentage was verified to a considerable extent by three objective tests as follows: 1. An average pulse rate of 104.5 before operation was reduced to 87 after operation, and 87 per cent of the patients showed a reduction or continuation of a normal pulse rate. 2. Sixty-seven patients gained an average of 9 pounds (4.1 Kg.), while nine lost an average of 6 pounds (2.7 Kg.) after operation and 89 per cent either gained weight or continued a normal weight. 3. An average basal metabolism of plus 28 before operation was reduced to an average of plus 8 after operation, while 84 per cent showed either a reduction or a continuance of a normal basal metabolic rate. Taking all factors into consideration, the author would place the proportion of cures three months after thyroidectomy somewhere between 80 and 90 per cent. With

an operative mortality of 1 per cent and a cure of 80 to 90 per cent in three months, thyroidectomy seems to offer the best chance of cure in most cases of goiter.

Bilateral Pleural Empyema.—Keyes summarizes forty-one cases of bilateral empyema occurring from 1910 to 1930, three previously unreported, and outlines the natural history and treatment of the disease, The literature since the last complete reports is reviewed. Attention is called to simultaneous bilateral thoracotomies as an advisable method of treatment under certain circumstances. It is recommended that the second side be drained soon after the first. The initial drainage should be of the closed type.

Intra-Abdominal Apoplexy.—Green and Powers report a case of spontaneous rupture of a primary branch of the left gastric artery. Only four comparable cases have been found in the literature. These patients presented symptoms and physical signs that suggested a preoperative diagnosis of perforated peptic ulcer or acute pancreatitis. Abdominal exploration in four cases revealed a large hemoperitoneum. The fifth was demonstrated at necropsy. In three instances the bleeding vessel was identified and ligated, and the patients recovered. These cases have been classified under the general term of intra-abdominal apoplexy.

Archives of Ophthalmology, Chicago

5: 691-848 (May) 1931

*Squint: Its Physiopathology and Surgical Treatment. O. Barkan, H. Barkan, H. O. Randel and H. G. Smith, San Francisco.—p. 691.
*Niemann-Pick's Disease with Cherry-Red Spots in the Macula: Ocular Pathology. I. Goldstein and D. Wexler, New York.—p. 704.
Refraction for Peripheral Field of Vision. C. E. Ferree, G. Rand and C. Hardy, Baltimore.—p. 717.
Electrocoagulation of Pterygia. M. F. C. Zubak, Wheeling, W. Va.—p. 732.
*Binocular Vision and Projection. A. Duane, New York.—p. 734.
*Senile Cataract: Use of Parathyroid Extract. D. B. Kirby, New York.—p. 754.
*Retinal Detachment: Method of Accurately Localizing Tears. A. Cowan and L. F. McAndrews, Philadelphia.—p. 760.
*Heterophorias: 1. New Test for Vertical Phorias, with Observations on Patients with Presumably Negative Histories. S. V. Abraham, Chicago.—p. 766.
*Sympathetic Ophthalmia Unassociated with Perforation or Rupture of Eyeball. J. H. Delaney, Erie, Pa.—p. 781.
Retinal Detachment. E. C. Ellett, Memphis, Tenn.—p. 784.
*Transplantation of Human Cornea: Case. B. W. Key, New York.—p. 789.

Squint.—According to Barkan and his collaborators, strabismus of relatively recent origin is in the nature of a habit spasm or an impulse of contraction and relaxation. According to Sherrington's law of reciprocal innervation such a contraction and relaxation would be inclined to persist, and the longer it remained or existed the greater would be the tendency to perpetuate itself. Defective fusion and reciprocal innervation explain the pathogenesis of the great majority of cases of squint. Lack of consideration of these elements is the commonest cause of failure of corrective measures. Rational therapy consists in early operation to break through the impending or developing spasm of contraction and relaxation before structural changes and amblyopia have occurred and while the fusion faculty is still capable of development. This can be accomplished by the Cinch shortening method at an early age without any of the disadvantages or risks of other known operative procedures.

Niemann-Pick Disease.—Goldstein and Wexler report a case of typical Niemann-Pick disease with cherry-red spots in the macula in both eyes. Of exceeding interest in the microscopic study of the right eye was the discovery of a group of ganglion cells at the site of the ciliary nerves close to the optic nerve. These cells, constituting the episcleral ciliary ganglion of Axenfeld, were studied in detail on account of their rare occurrence.

Binocular Vision and Projection.—Duane states that visual projection gives one the notion of the shape of objects, their relative and, to a certain extent, their absolute size and their position with regard to one another either in a transverse or in a fore-and-aft plane. However, postural elements enter into these judgments, especially the latter. Postural projection gives one notions of the erectness of objects and tells one whether they are straight ahead, to one side or above or below. Finally, both elements, visual and postural, combine to tell one how far away external objects are.

Senile Cataract.—Kirby treated three series of patients, one series with daily injections of 30 units of parathyroid extract-Collip for five successive days; a second series with injections of 20 units three times weekly for a period of one month, and a third series with 20 units approximately three times a week for periods of several months, without any improvement in the vision, refraction or objective appearance of the cataracts. He believes that the failure of parathyroid extract to cause absorption of the opacities of the lenses in these cases in no way reflects on the value of this agent in cases of deficiency in calcium, in which calcium and parathyroid therapy are indicated.

Retinal Detachment.—Cowan and McAndrews use an ordinary perimetric chart, scaled in the proportion of 0.25 mm. for each degree in the field, as a plan of that portion of the interior of the eyeball which is covered by the retina. With the aid of such a chart and a method described by them, one has a simple and accurate means of determining the anatomic location of any visible lesion of the fundus.

Heterophorias.—Abraham describes a combination of the modified duction and the Maddox rod tests. This modified duction test gives consistent readings. The readings are useful in obtaining the vertical phoria present and are closely related to the amount of the vertical phoria, especially as determined by the modified Maddox rod test. Muscular equilibrium, at least as far as the vertically acting muscles are concerned, should be computed from the center of the duction equilibrium as the zero mark. In 192 cases considered to be clinically free from any suggestion of muscular inbalance, hyperphoria was the least common and esophoria the most common imbalance.

Sympathetic Ophthalmia.—Delaney reports an indisputable case of sympathetic ophthalmia without the usual perforation or rupture of the eyeball. He feels that the possibility of such a development should be borne in mind in all cases of traumatic uveitis, even when there has been no opening of the tunics of the eye.

Transplantation of Human Cornea.—Key reports a case of transplantation of the human cornea in which the transplant was a complete "take." The transplant has been retained in its normal position and without loss of substance, conjunctival or corneal, for one year and seven months. There has been no displacement of the transplant; the surface epithelium is intact, the surface round and regular, and a large portion of the corneal substance has remained fairly clear. The bulbar conjunctiva, the subconjunctival tissue and sclera and the blood vessels of these tissues are normal in appearance. No scar line denoting the limitations of the conjunctival transplant is noticeable except under magnification. This is an especially striking feature of the upper bulbar conjunctiva, where a large symblepharon was removed and only the conjunctival transplant furnished the epithelial covering, and where undoubtedly epithelial proliferation must have taken place. The anterior chamber has been maintained from the time of the first dressing (five days after operation). The pupil has remained slightly oval and without incarceration of the iris. There is no permanent hypertension. The patient has not complained of any pain in the eye or about the orbital region significant of an iritic or cyclitic reaction, nor has he complained of any irritation of the eye. With this experience as a guide, the author believes that this operation can and will be performed with reasonable restoration of vision.

California and Western Medicine, San Francisco

34: 321-392 (May) 1931

Cancer Program for California. L. C. Kinney, San Diego.—p. 321.
Susceptibility to Tumors: Some Factors Governing the Same. C. L. Connor, San Francisco.—p. 325.
Trichorrhexis Nodosa: Clinical Problem. C. R. Caskey, Los Angeles.—p. 329.
Review of Secondary Anemias: Part II. O. H. P. Pepper, Philadelphia.—p. 333.
Endometriosis. Alice F. Maxwell, San Francisco.—p. 337.
Pneumonia in Children: Comments on Three Hundred and Seventy-Five Cases. E. E. Moody, Los Angeles.—p. 340.
Cholecystectomy: New Methods in Technic. S. H. Mentzer, San Francisco.—p. 345.
Fracture Dislocations of Lower Cervical Spine. H. W. Spiers, Los Angeles.—p. 348.

Complex Rectal Fistulas: Their Operative Management. D. Smith, San Francisco.—p. 352.
Brain Lesions with Homolateral Phenomena of Pyramidal Tract Involvement. I. L. Meyers, Los Angeles.—p. 354.
Acute Prostatitis: Treatment with Heat Applications. B. W. Wright, Los Angeles.—p. 356.
Effects of Coffee on Sleep. L. L. Stanley and G. L. Tescher, San Quentin.—p. 359.
Chronic Meningococcemia. F. B. Clarke, Long Beach.—p. 361.
Cerebellar Ataxias: Six Cases. J. M. Nielsen and S. D. Ingham, Los Angeles.—p. 364.
Galen: Greek, Medievalist and Modern: Part II. S. V. Larkey, San Francisco.—p. 366.

Canadian Medical Association Journal, Montreal

24: 619-762 (May) 1931

*Bacteriophagy and Recovery from Infectious Diseases. F. d'Herelle, New Haven, Conn.—p. 619.
*Uncertain Potency of Liver Extracts in Treatment of Pernicious Anemia. E. S. Mills, Montreal.—p. 628.
*Liver Damage Following Cinchophen Preparations: Five Cases. J. B. Ross, Montreal.—p. 632.
Effects of Hypertonic Saline in Toxemias of Later Pregnancy. V. J. Harding and H. B. van Wyck, Toronto.—p. 635.
Investigation of Flora of Lymphatic Glands in Skin Diseases of Unknown Origin. G. V. Bedford, Winnipeg.—p. 640.
Changes in Bone Tumors After Intravenous Injections of Colloidal Solution. A. C. Hendrick and E. F. Burton, Toronto.—p. 642.
*Physiology of Parathyroid Glands. J. B. Collip, Montreal.—p. 646.
*Clinical Aspect of Disturbances of Parathyroid Gland. J. C. Meakins, Montreal.—p. 654.
Interrelationship of Nontuberculous Upper and Lower Respiratory Disease. J. H. Elliott, Toronto.—p. 657.
Sterility: Consideration of Important Factors in Diagnosis and Treatment. A. H. Aldridge, New York.—p. 660.
Treatment of Enuresis in Hospital Practice. S. J. Usher, Montreal.—p. 665.
How Sanatoriums Can Help in Prevention and Control of Tuberculosis. R. E. Wodehouse, Ottawa.—p. 668.
Use of Phenobarbital in Surgery. R. W. Graham, Oshawa.—p. 671.
Septicemia in Children. G. A. Campbell, Ottawa.—p. 674.
Health Advice Indicated in Earlier Manifestations of Cardiovascular Disease. K. A. MacKenzie, Halifax, N. S.—p. 676.
Physics and Biophysics of Roentgen Rays and Radium. W. H. McGuffin, Calgary.—p. 679.
Use of Nasal Sprays and Drops. V. E. Henderson, M. L. Beach and J. F. A. Johnston, Toronto.—p. 684.

Bacteriophagy.—D'Herelle states that, so far as recovery from an infectious disease is concerned, a simple observation of the facts suggests that it cannot be the consequence of an acquired immunity. As a matter of fact, all the infectious diseases, not to mention the pyogenic infections, are not immunizing. On the other hand, in the case of those diseases which are actually immunizing, if recovery results from the acquisition of immunity, how can one explain satisfactorily the relapses which take place during convalescence, at the moment when the immunity should be at its maximum potency? This proves that antibodies do not provoke the recovery and, furthermore, that immunity was not yet established at the moment of the recovery from the first attack. These observations suggest the hypothesis that recovery can take place without the phenomena of immunity intervening and that acquired immunity, far from being the cause of the recovery, must appear from ten to twenty days after the recovery. Immunity must be not the cause but the consequence of the recovery. From the beginning of his study of bacteriophagy the author has been struck by the fact that the appearance within the body of the patient of the principle which leads to bacteriophagy coincides with the time when the symptoms ameliorate. Absent during the disease, bacteriophage appears constantly in convalescents. Bacteriophage is thus contemporaneous with recovery. Various experiments show that the bacteriophage exists in corpuscular form. The bacteriophage corpuscle is a living, ultramicroscopic being, as is proved by the fact that this corpuscle dissolves bacteria through the agency of a ferment which it secretes. The secretion of a ferment implies a metabolism and this is an essential character of living beings. A bacteriophage is, therefore, of necessity a virus, a parasite of bacteria. In its action each bacteriophage is not specific, for a given bacteriophage may parasitize and dissolve bacteria belonging to different species, sometimes as unrelated as the streptococcus and the colon bacillus or even the plague bacillus and *Bacillus typhosus*. The characters of each strain of bacteriophage are variable. There are races of bacteriophage able to attack many species of bacteria, others that attack but a single species or even but a single bacterial strain. Certain of them are so potent that they are able in vitro to destroy and to dissolve within less than two hours all the bacteria contained in a culture, while others exercise a scarcely perceptible, partial action.

Liver Extracts in Pernicious Anemia.—From the study of a series of cases, Mills concludes that raw liver pulp is superior to extract in the treatment of pernicious anemia. This is especially true when there is doubt as to the potency of the extract used.

Cinchophen Preparations.—Ross reports five cases of injury of the liver, three of which progressed to a fatal termination. All occurred after the use of cinchophen preparations.

Physiology of Parathyroids.—Collip discusses the results of a study of the progressive changes in blood chemistry during overdosage of parathyroid hormone. The calcium curve of the blood serum may be represented as a gradual ascent to a level of 20 mg. per hundred cubic centimeters. It remains at this level for some hours; then in the terminal stages it usually falls a few milligrams per hundred cubic centimeters. The inorganic phosphorus of the serum is practically unaffected until the blood serum calcium has reached a level of 15 mg. per hundred cubic centimeters. It then rises rapidly and continuously till death ensues. Coincident with the rise in inorganic phosphorus there is evidence of rapid failure of kidney function and, in addition to suppression of urinary secretion, the nonprotein nitrogen and urea of the blood increase at a uniform rate until at death values of well over 100 mg. per hundred cubic centimeters of urea nitrogen are reached; also there is evidence of a marked acidosis in the latter period. No untoward symptoms are manifested by the dog as a rule until the blood serum calcium has reached 15 mg. per hundred cubic centimeters. Dogs may be maintained in a condition of mild hypercalcemia over a period of weeks by small daily doses of the hormone without marked ill effects, although such treatment undoubtedly causes a great loss of skeletal calcium through excessive excretion in the urine of calcium salts.

Parathyroid Dysfunction.—Meakins states that, clinically, two conditions are identifiable with disturbed parathyroid function, the first being parathyroid tetany due to a hypoparathyroidism characterized by a low serum calcium, a positive calcium balance and great hypertonicity and excitability of the neuromuscular system. The second is generalized osteitis fibrosa, a condition of hyperparathyroidism in which there are a high serum calcium content, a negative calcium balance, a tendency to hypotonicity and hypo-excitability of the neuromuscular system, a pronounced rarefaction of the bones and a resorption of the corticalis and original spongiosa, this being in striking distinction to the cessation of calcification characteristic of osteomalacia and rickets.

Canadian Public Health Journal, Toronto

22: 217-270 (May) 1931

Reduction in Diphtheria in 36,000 Toronto School Children as Result of Immunization Campaign. N. E. McKinnon, Mary A. Ross and R. D. Defries.—p. 217.
Septic Sore Throat Epidemic: Epidemiologic Study. A. L. McKay and R. P. Hardman.—p. 224.
Id.: Note on Clinical Findings. R. H. Armstrong.—p. 234.
Id.: Bacteriologic Investigation. A. L. McNabb, F. H. Fraser and D. T. Fraser.—p. 236.
Are Vital Statistics Worth While H. B. French.—p. 242.

Endocrinology, Los Angeles

15: 97-176 (March-April) 1931

*Association of Diabetes Insipidus and Diabetes Mellitus. F. N. Allan and L. G. Rowntree, Rochester, Minn.—p. 97.
*Reserve Incretory Capacity of Pancreas. R. Novoa Santos and F. Mosquera Soutó, Madrid, Spain.—p. 107.
*Sexual Dysfunction in Adenomas of Pituitary Body. W. R. Henderson, Boston.—p. 111.
*Anterior Pituitary Therapy in Spontaneous Ovarian Dysfunction. W. O. Nelson, New York.—p. 128.
*Effect of Quinine on Thyroid Gland. L. Bromberg and S. H. Gray, St. Louis.—p. 135.
Eunuchoidism Associated with Emaciation. J. W. Scott, Edmonton, Alta.—p. 146.

Diabetes Insipidus and Diabetes Mellitus.—Allan and Rowntree describe two cases in which diabetes insipidus was associated with diabetes mellitus and one case in which transitory glycosuria preceded diabetes insipidus. The relationship of these two diseases is still uncertain. The three cases are pre-

sented in the hope that the accumulation of more information may help to solve the problem. From the practical standpoint it is significant to find that the disturbance of carbohydrate metabolism encountered in these cases can usually be controlled by diet and insulin, and the use of pituitary extract for control of polyuria does not interfere with the effectiveness of insulin.

Reserve Incretory Capacity of Pancreas.—Novoa Santos and Mosquera Soutó noted that the injection of duodenal secretin in a series of human cases usually decreased the blood sugar level or glycosuria and hence stimulated the islands of Langerhans. The amount of this decrease has no necessary correlation with the actual overt reaction to carbohydrate ingestion per se. The amount of reduction following the administration of a standard dose of secretin serves as a criterion of the reserve capacity of the islands of Langerhans.

Sexual Dysfunction and Pituitary Adenomas.—From an analysis of the disorders of sex in 367 cases of hypophyseal adenomas, Henderson concludes that the sexual dysfunction occurs only when the sella turcica has become considerably expanded, and that there is no difference in this respect between the two common types of adenoma (acidophilic and chromophobe). The sexual dysfunction therefore may be assumed to be due solely to the compression of the basophil cells by the space-occupying lesion. Favorable to this mechanical view of the process is the fact that the normal menstrual cycle may be resumed, and that pregnancy may occur after favorable operations with radical extirpation of the adenoma.

Anterior Pituitary and Ovarian Dysfunction.—To eight adult female rats, which for at least five weeks had shown no estrous changes in their vaginal smears, Nelson gave daily implants of anterior lobe, or daily injections of an extract prepared from anterior lobe material. Estrus occurred, in each instance, on the second or third day subsequent to the institution of treatment. The ovaries and uteri prior to treatment presented a picture approximating that of diestrus, while the remaining ovaries and uteri, removed subsequent to the occurrence of the induced estrus, were either of an estrous or meta-estrous character. When copulation was permitted at the time of induced estrus, successful pregnancies resulted. The pituitaries of these females were capable of promoting precocious maturity in a young rat when introduced intramuscularly. No further estrous changes could be demonstrated beyond the initial induced estrus. It is concluded that the etiology of the aberrant ovarian behavior observed in these animals probably was some derangement of the normal hypophyseal gonadal relationship—possibly the nonrelease of the gonadal stimulating hormone. Attention is called to the possible therapeutic value of anterior lobe treatment in some types of human sterility.

Effect of Quinine on Thyroid.—Bromberg and Gray studied the effect on the thyroid of quinine hydrochloride and quinine hydrobromide administered to rabbits and to guinea-pigs for several weeks in amounts proportionately double the human dosage. It was found that, experimentally, quinine caused regressive histologic changes in compensatory hypertrophy in the thyroid of the rabbit but not of the guinea-pig. Quinine in repeated, relatively large therapeutic doses had no effect on the microscopic appearance of the thyroid of the normal rabbit or guinea-pig. Carefully controlled observations in five cases of exophthalmic goiter treated with quinine sulphate revealed no beneficial clinical effects.

Illinois Medical Journal, Oak Park

59: 325-408 (May) 1931

Thyroidectomy for Thyrotoxicosis in Patients Beyond the Fiftieth Year. J. M. Mora and E. I. Greene, Chicago.—p. 338.
Hyperplastic Sinus Disease in Relation to Retrobulbar Neuritis. S. G. Higgins, Milwaukee.—p. 340.
Hyperesthetic Rhinitis and Asthma Due to Digestive Ferments. W. L. Beecher, Chicago.—p. 343.
Ocular Muscle Imbalance. Method of Diagnosis and Report of Case. H. M. Thometz, Chicago.—p. 344.
Private Sanatoriums for Mental Patients in Illinois. J. M. Grimes, Chicago.—p. 346.
Effect of Intrapartum Care on Mother. J. P. Greenhill, Chicago.—p. 349.
Pulmonary Tuberculosis and Constitutional Anomalies. J. Ritter, Miami, Fla.—p. 352.
Impotency as Seen by Urologist. C. O. Ritch, Chicago.—p. 357.
Postoperative Wound Infections ("Stitch" Abscess): Summary of Possible Etiologic Factors. G. S. van Alstyne, Chicago.—p. 359.
Preservation of Parathyroids in Goiter Surgery. G. M. Curtis, Chicago.—p. 361.
Wassermann Reaction in Asthma. R. Hecht, Chicago.—p. 366.
Diagnosis and Treatment of Acute and Chronic Effects of Injuries of Head. W. E. Dandy, Baltimore.—p. 368.
Cesarean Section, Its Indications, Limitations, Types and Complications. G. K. Sims, Chicago.—p. 372.
Treatment of Vincent's Angina and Stomatitis. H. A. Rosenbaum, Chicago.—p. 375.
Surgery of Pulmonary Tuberculosis. R. B. Bettman, Chicago.—p. 379.
Instrument for Empty Vein Injection Treatment of Varicose Veins. H. R. Kenny and J. M. Benedetto, Chicago.—p. 378.
Rockefeller Foundation for Well-Being of Mankind. A. R. E. Wyant, Chicago.—p. 381.
Carbon Monoxide Poisoning. W. D. McNally, Chicago.—p. 383.
Inguinal Hernia in Early Infancy with Report of Three Strangulated Inguinal Herniae Occurring in Nurslings. A. P. Heineck, Chicago.—p. 388.
Pernicious Anemia and Emotions. H. K. Scatliff, Chicago.—p. 394.
Management of Diabetic. C. J. McMullen, Chicago.—p. 396.
County Tuberculosis Sanatorium—City Located. C. M. Jack and D. O. N. Lingberg, Decatur.—p. 400.
Spontaneous Amputation of Tongue. L. Schultz, Chicago.—p. 402.

Indiana State Medical Assn. Journal, Fort Wayne

24: 243-306 (May) 1931

Anorectal Region and Its Relation to Disease. H. H. Wheeler, Indianapolis.—p. 243.
Throat and Hematopoietic System. J. J. Shea, Memphis, Tenn.—p. 246.
Third Trimester of Pregnancy. J. A. Work, Elkhart.—p. 250.
Treatment of Hay-Fever (Pollenosis). H. S. Hatch, Indianapolis.—p. 255.
Practical Points in Infant Feeding. I. J. Raphael, Evansville.—p. 258.
Epidemic Encephalitis Lethargica with Reference Especially to Treatment of Parkinsonian Residue. J. V. Richart, Terre Haute.—p. 261.
Estimation of Permanent Disability in Industrial Accidents. H. W. Garton, Fort Wayne.—p. 263.

Iowa State Medical Society Journal, Des Moines

21: 209-272 (May) 1931

Foreign Bodies in Air and Food Passages: Seventy-Six Cases. T. R. Gittins, Sioux City.—p. 209.
Axial Myopia: Phases of Etiology and Treatment. F. W. Dean, Council Bluffs.—p. 216.
Hereditary Hypertension. D. J. Glomset, Des Moines.—p. 220.
Coronary Thrombosis. H. W. Rathe, Waverly.—p. 222.
Anesthetic in Tonsil and Adenoid Operations. J. E. Stansbury, Cedar Rapids.—p. 227.
Peritonsillar Abscess. H. H. Lamb, Davenport.—p. 230.
Complications of Peritonsillar Abscess. W. H. Foster, Clinton.—p. 233.
Cancer Problem. A. V. Hennessy, Council Bluffs.—p. 237.
Dehydration in Epilepsy: Preliminary Report. W. D. Abbott and E. Fresk, Des Moines.—p. 241.

Journal of Bacteriology, Baltimore

21: 305-381 (May) 1931

Conjunction of Disexual Forms in Ascobacillus. J. Broadhurst, Y. Moriyama and Dorothy Pease, New York.—p. 305.
Staining of Flagella of Bacteria, with Especial Reference to Mordants. W. E. Maneval, Columbia.—p. 313.
Bacteriologic Evaluation of Some New Water Soluble Organo-Mercury Compounds. J. H. Waldo, H. A. Shonle and H. M. Powell, Indianapolis.—p. 323.
Bacterial Spores. E. Leifson, Baltimore.—p. 331.
Development of Flagella on Germinating Spores. E. Leifson, Baltimore.—p. 357.
Studies on Carbon Metabolism of Organisms of Genus Mycobacterium: II. Utilization of Organic Compounds in Synthetic Medium. M. H. Merrill, St. Louis.—p. 361.
Id.: III. End Products of Carbohydrate Utilization as Determined in Synthetic Media Cultures. M. H. Merrill, St. Louis.—p. 375.

Journal of Industrial Hygiene, Baltimore

13: 117-144 (April) 1931

Dangers in Refining Radioactive Substances. H. Schlundt, W. McGavock, Jr., and Mildred Brown, Columbia, Mo.—p. 117.
Reduction of Mine Air Temperatures. T. Bedford and C. G. Warner, London.—p. 135.
Colorimetric Method for Detection and Estimation of Small Amounts of Lead. E. W. Krans and J. B. Ficklen.—p. 140.

Journal of Nutrition, Springfield, Ill.

4: 1-161 (May) 1931

Studies in Calcium and Phosphorus Metabolism: Calculation of Acid Base Content of Diet. W. T. Salter, Constance Fulton and Frances Angier, Boston.—p. 1.
Some Factors Affecting Accuracy in Collection of Data on Growth in Weight of School Children. Emma E. Sumner and Jessie Whitacre, College Station, Texas.—p. 15.
Factors Which Determine Renal Weight. Endogenous Protein Metabolism. E. M. MacKay and J. R. Cockrill, San Francisco.—p. 25.

*Id.: Effect of Feeding Desiccated Thyroid. E. M. MacKay and Lois L. MacKay, San Francisco.—p. 33.
*Influence of State of Hydration of Body on Insensible Loss of Weight in Children. R. C. Manchester, Clara Husted and I. McQuarrie, Rochester, N. Y.—p. 39.
*Growth and Reproduction on Milk Diets. J. Waddell, H. Steenbock and E. B. Hart, Madison, Wis.—p. 53.
*Male Sterility on Milk Diets. J. Waddell, Madison, Wis.—p. 67.
Vitamin E in Iron Treated Dry Rations. J. Waddell and H. Steenbock, Madison, Wis.—p. 79.
Cysteine and Taurine as Substituents for Cystine in Nutrition. H. H. Mitchell, Urbana, Ill.—p. 95.
Utilization by Normal Adult Subjects of Calcium and Phosphorus in Raw Milk and in Ice Cream. Martha M. Kramer, Myra T. Potter and Isabelle Gillum, Manhattan, Kan.—p. 105.
Vegetables in Diets of Preschool Children. Laura McLaughlin, Marie Tarwater, Miriam Lowenberg and Georgiana Koch, Ames, Iowa.—p. 115.
Vitamin B and G Requirements of Lactation. Dorothy L. Hussemann and Rossleene Arnold Hetler, Urbana, Ill.—p. 127.

Factors That Determine Renal Weight.—The MacKays state that the administration of a diet containing 0.4 per cent of desiccated thyroid to male albino rats from 26 to 70 days of age was followed by a marked increase in the weight of the kidneys. This increase in renal weight was greater than could be accounted for by the increase in protein intake incident to the increased food consumption which followed the administration of thyroid. The result is contrasted with the decrease in the weight of the kidneys which results from removal of the thyroid. It is suggested that the influence of the thyroid on kidney weight may be through its effect on the maintenance metabolism of the organism.

Influence of Hydration on Insensible Loss of Weight.—Manchester and collaborators measured the total insensible loss of body weight or insensible perspiration under standard conditions in five children ranging in age from 9 to 16 years. Variations, due to difference in diets, to restriction or forcing of water intake, to marked diuresis and to antidiuresis, were determined. In a normal ("saturated") state of hydration there is a close parallelism between the insensible loss and the energy metabolism under ordinary conditions. For practical clinical purposes, this method of estimating the energy metabolism offers many advantages over the ordinary gasometric methods. Fairly marked dehydration from any cause interferes with the usefulness of the method, because the total insensible water loss is diminished to levels far below those indicated in the standard tables. Superhydration, due to excessive water drinking and to administering of the antidiuretic principle from the hypophysis cerebri, likewise interferes, because in this state the values for the insensible loss may be far above those predicted from the tables. The type of diet and the mineral content of the ingesta apparently influence the insensible loss also and should be considered in the interpretation of results when the regimen is undergoing sudden changes or is extreme in any respect. Degrees of dehydration, such as those observed by the authors, are not followed by significant alterations in the metabolic rate.

Growth and Reproduction on Milk Diets.—Waddell and his associates made a study of the growth and reproductive performance of rats on diets of cow's whole milk supplemented with copper and with copper and iron. On a diet of whole milk and copper a chronic anemia, due to the low iron intake, was observed. Growth and reproduction were below normal, although fair weights were eventually reached and living young were produced. Many of the young born were not nursed, and those that were suckled grew more slowly than young from the stock colony. Third generation animals were secured. On a diet of whole milk, iron and copper, no anemia was observed, but growth and reproduction were still subnormal. The rearing of young was poor, as the result of poor mammary secretion. It is suggested that subnormal growth and poor rearing of young may be due to the low caloric diet. No specific evidence of deficiency in vitamin B was observed. By means of daily vaginal smears it was established that subnormal reproduction was due to late sexual maturity and poor ovulation. Some females ovulated at long intervals and never mated. Preliminary experiments indicate that the addition of small amounts of either manganese or iodine, or both, greatly improves the ovulation rhythm in females on the milk, copper and iron diet. No evidence of lack of vitamin E was noted in females on these milk diets.

Male Sterility on Milk Diets.—Waddell observed total sterility in male rats on a diet of cow's whole milk supplemented with small amounts of iron and copper salts. This sterility is characterized by the complete disappearance of the germinal epithelium, great loss in the amount of testicular tissue and pronounced edema. It is not due apparently to lack of vitamin E. The effect on the testis is greatly intensified by some action of the ferric chloride.

Medicine, Baltimore

10: 135-256 (May) 1931

*Nephrosis. L. Leiter, Chicago.—p. 135.
*Significance of Local Factors for Electivity in Central Nervous System Disease Processes. W. Spielmeyer, Munich, Germany.—p. 243.

Nephrosis.—Leiter states that the nephrotic syndrome seems to be well established clinically and pathologically as something not directly related to glomerulonephritis or inflammatory renal disease, although commonly associated with it. In its primary, uncomplicated form, this syndrome is known as nephrosis and is a rare disease. The specific changes found in the kidneys in nephrosis and the absence of changes in other organs or systems suggest a primary renal lesion. Before one can accept such an hypothesis, however, it must be definitely established that the renal changes occur very early in the disease. The view that nephrosis is a general metabolic disorder, with secondary involvement of the kidneys, is likewise not supported by sufficient evidence. In spite of the marked increase in the blood lipoids, particularly cholesterol and its esters, and the lipoid infiltration in the kidneys, there is no satisfactory evidence to warrant the inclusion of nephrosis and the nephrotic syndrome among the primary general disturbances of lipoid metabolism. The albuminuria in nephrosis may be explained in two ways. On the one hand, a primary renal lesion may alter renal capillary permeability to the plasma proteins. On the other hand, the albuminuria may be secondary to qualitative changes in the plasma proteins and be a part of the primary metabolic disorder. The edema in nephrosis is probably closely related to the reduction in the plasma proteins, whether due to renal loss or to disturbance in formation. No condition has yet been produced in laboratory animals that could be dignified by the term "experimental nephrosis."

Electivity in Central Nervous System Disease Processes.—Spielmeyer warns against an excessive expansion of the term "system diseases"; he does not agree with those authors who call almost all locally circumscribed, or even only regionally concentrated, lesions by this name. He has a different point of view because his experiences have taught him that the local electivity of the process is caused by quite different factors in the various cases. In system diseases, certain neuron systems (that is, gray nuclei and fibrous systems) which belong together anatomically and functionally are especially attacked by the process. However, parts of the brain that have nothing to do with one another may become diseased as well. An elective disease may be seemingly restricted to one system, but in the same disease and the same case, this or that portion which has no connection with the attached system may also become diseased. The interesting fact that, besides unrelated, also related apparatus become diseased, still remains to be explained. This may be the case because functionally related nuclei also have a similar nutritional need and a similar vascularization. Thus, system and vascular vulnerability may coincide. Emphasis is laid on the fact that elective changes exist which may be explained neither by the systemic nor by the vascular factor.

New England Journal of Medicine, Boston

204: 1017-1076 (May 14) 1931

Operative Treatment of Phlegmasia Alba Dolens. J. Homans, Boston.—p. 1025.
Mechanism of Development of Collateral Circulation. D. A. Mulvihill, New York, and S. C. Harvey, New Haven, Conn.—p. 1032.
Treatment of Postoperative Ventral Hernia. J. J. Hepburn, Boston.—p. 1035.
What We Have Learned from the Ten Year Program in Massachusetts. D. Zacks, Boston.—p. 1037.
Hyperinsulinism. G. H. Tuttle, South Acton.—p. 1039.
What Committee on Costs of Medical Care is Trying to Do. C. Frothingham, Boston.—p. 1041.
Medical Museum: Its Rôle in Teaching of Medical History. C. F. Painter, Boston.—p. 1047.

204: 1077-1128 (May 21) 1931

*Funnel Chest Deformity. J. G. Kuhns, Boston.—p. 1077.
Congenital Abnormalities of Lumbosacral Region as Causes of Persistent Low Back Pain. E. Pyle, Waterbury, Conn.—p. 1083.
Hemorrhage in Pulmonary Tuberculosis. J. B. Hawes 2d, Boston.—p. 1088.
Studies in Fat Metabolism: IV. New Procedures for Quantitating Organic Phosphorus in Small Amounts of Bile. C. W. McClure, Boston, Esther L. Bloomberg, Brighton, and Mildred E. Huntsinger, Arlington, Mass.—p. 1091.
Physiology of Ovarian Hormones. H. S. Finkel, Boston.—p. 1094.
Case of Purpura with Unusual Necropsy Findings. H. Pollack, Boston.—p. 1098.
Ethyl-Iodide in Ear, Nose and Throat. J. Prenn, Boston.—p. 1099.
Transplantation of Gallbladder. W. J. Stater, Portland, Ore.—p. 1101.

Funnel Chest Deformity.—Kuhns states that funnel chest deformity is found chiefly as a developmental deformity in the slender type of child with faulty posture. The chief factor in its development is a disturbance in the mechanics of respiration, associated with a low position of the diaphragm. Various investigators have shown its frequent association with serious physical disabilities. The treatment that has been found most efficacious in preventing, as well as in correcting, the deformity has been the avoidance of fatigue, the remedying of faulty use of the body, and the maintenance of good carriage.

New Jersey Medical Society Journal, Orange

28: 287-390 (April) 1931

Doctor's Confession of Faith—I Speak of the Children of Hippocrates, of the Cult of Aesculapius. W. P. Eagleton, Newark.—p. 287.
Treatment of Coronary Thrombosis. A. S. Hyman, New York, and A. E. Parsonett, Newark.—p. 296.
Clinical Significance of High and Low Blood Pressure. R. Burton-Opitz, New York.—p. 302.
Practical Management of Diabetes. J. R. Scott, New York.—p. 304.
Hereditary Epistaxis: With and Without Hereditary (Familial) Multiple Hemorrhagic Telangiectasia. H. I. Goldstein, Camden.—p. 309.
Medical Aspects of Disability in Industrial Lead Poisoning. M. Kummel, Newark.—p. 327.
Differential Diagnosis of Lead Poisoning. J. S. Mark, Woodbridge.—p. 334.
Liver Cysts: Case. J. H. Hermann and G. B. Griffin, Orange.—p. 337.
Treatment of Active Measles by Intramuscular Injection of Recent Convalescent Whole Blood. J. Piller, Paterson.—p. 340.
Anemia of Pregnancy. R. A. Kilduffe, Atlantic City.—p. 341.
High Lights in Life of Robert Koch. H. Subin, Atlantic City.—p. 342.
Etiology, Diagnosis and Treatment of Peptic Ulcer. G. H. Lathrope, Newark.—p. 344.

New York State Journal of Medicine, New York

31: 611-674 (May 15) 1931

Use of Trichophytin as Diagnostic and Therapeutic Agent in Mycotic Infections of Skin. L. S. van Dyck, J. Kinsbury, B. Throne and C. N. Myers. New York.—p. 611.
Management of Diabetics in General Practice. L. F. Schiff, Plattsburg.—p. 617.
Prostate Gland from Viewpoint of Internist. J. R. Wiseman, Syracuse.—p. 619.
Recognition of More Common Nervous and Mental Disorders. C. Rosenheck, New York.—p. 623.
Typhoid Investigation. F. W. Laidlaw, Middletown.—p. 626.
Results of Treatment of Toxic Goiter from Standpoint of Basal Metabolic Rate. G. M. Goodwin and M. K. Smith, New York.—p. 627.
An Oval Trocar as Aid in Closed Thoracostomy for Empyema. J. Sarnoff, Brooklyn.—p. 635.
Periodic Health Examination: Keystone of Preventive Medicine. D. B. Armstrong, New York.—p. 637.

Pennsylvania Medical Journal, Harrisburg

34: 535-604 (May) 1931

Arthritis. L. T. Swaim, Boston.—p. 535.
Diagnosis and Treatment of Benign Cysts of Ovary. S. A. Chalfant, Fittsburgh.—p. 537.
Diagnosis and Treatment of Endometrial Cysts of Ovary. F. E. Keene, Philadelphia.—p. 540.
Diagnosis and Treatment of Malignant Ovarian Tumors. B. M. Anspach and J. B. Montgomery, Philadelphia.—p. 543.

Public Health Reports, Washington, D. C.

46: 1149-1226 (May 15) 1931

Public Health Progress in Knoxville, Tenn. J. W. Mountin.—p. 1150.

Tennessee State Medical Assn. Journal, Nashville

24: 167-204 (May) 1931

Some Problems of Organized Medicine. J. B. McElroy, Memphis.—p. 167.
Affections of Salivary Glands and Their Ducts. D. H. Anthony, Memphis.—p. 175.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 735-780 (May 2) 1931

*Remarks on Treatment of Recent Simple Fractures of Long Bones. C. H. Fagge.—p. 735.
*Combined Use of Living Virus and Immune Serum for Immunization Against Virus Infections. G. M. Findlay and E. Hindle.—p. 740.
Review of Sex Characters with Especial Reference to Adrenal Cortex. L. R. Broster.—p. 743.
Undulant Fever in Infancy. B. Williamson and A. J. Gibson.—p. 748.
*Infections and Insulin Action: Observations on Unusual Case. R. D. Lawrence and R. A. McCance.—p. 749.

Simple Fractures of Long Bones.—Fagge emphasizes the fact that if reduction is perfect the posture in which the arm is immobilized is immaterial; when anatomic reposition has been secured there is usually so close an apposition of the irregular fractured surfaces that a force applied to the hand does not cause these surfaces to move on one another but acts on the elbow joint, where the resistance to movement is less than at the fracture. This observation confirms what he has written on several occasions and has taught for years, namely, that if one carries out the reduction of such fractures under an anesthetic on a roentgen table, one can see that, after reduction, the rough surfaces of the fracture so intermesh as to resist the recurrence of deformity, and if one now flexes and extends the elbow the deformity will not recur within certain limits, which are wider the more transverse the line of the fracture. As a rule, reposition is maintained perfectly at a right angle, and what is known as the Jones position is quite unnecessary. This is a matter for congratulation, for, in the experience of most surgeons, immobilization of the elbow in acute flexion incurs a grave risk of ischemic palsy.

Combined Use of Living Virus and Immune Serum for Immunization.—Findlay and Hindle describe experiments they performed to determine whether a satisfactory degree of immunization might be obtained by the use of a combination of immune serum and virus in two dissimilar human infections; namely, vaccinia and yellow fever. In these experiments active virus was preferred to attenuated virus or vaccines, as, when combined with immune serum, no local or general reaction was observed and it seemed likely that a fully active virus would produce a more lasting effect than an attenuated one. This method combines the advantages of giving an immediate protection, as a result of the immune serum, and a lasting effect, probably as a result of certain changes in the tissues of the host produced by the introduction of the living virus. On the basis of their observations, the authors conclude that immunization against vaccinia and yellow fever may be obtained by the injection of a mixture of immune serum and living virus without giving rise to any general or local reaction.

Infections and Insulin Action.—Lawrence and McCance report an unusual case of septicemia in a diabetic person in whom the insulin requirements, after an initial increase, became progressively less as the sepsis grew worse. This reduction coincided with a falling temperature and failure of reactive powers. It is suggested that the inhibition of insulin action by sepsis is not directly due to the sepsis or toxins but to the accompanying febrile reaction. It is further suggested that this reaction may be due to the increased activity of the suprarenals and the thyroid, recognized antagonists to insulin. If their reaction fails or diminishes, as in the case observed, then the antagonism to insulin is removed and the dose required becomes less, in spite of increasing sepsis.

Glasgow Medical Journal

34: 217-272 (May) 1931

Some Sixteenth Century Scientists. E. H. L. Oliphant.—p. 217.
*Cholelithiasis: Some Pathologic Observations. W. A. Mackey.—p. 225.

Cholelithiasis.—Mackey presents the results of a pathologic and bacteriologic study of a consecutive series of seventy-five gallbladders removed surgically on account of symptoms of disease. An attempt was made to trace the process of stone formation in its various stages, and the following conclusions were arrived at: Stones such as the solitary cholesterol and

the pigment stone may arise apart from demonstrable gallbladder disease. The mulberry stone occurs in cholesterosis of the gallbladder and, on the whole, the evidence indicates that this process may at the outset be metabolic rather than infective. Laminated mixed stones arise as the result of acute inflammatory attacks of the gallbladder. The presence of stones of any kind predisposes to attacks of acute cholecystitis. Cholecystitis pursues a course of exacerbations and remissions. During the latter, organisms may not be recoverable from the bile or from the gallbladder wall. The organisms most frequently found have been nonhemolytic streptococci and coliform bacilli, though in almost half of the definitely pathologic cases no organisms have been recovered. It is suggested that the pathologic evidence available favors, on the whole, cholecystectomy, performed as an operation of election in the intervals between attacks, as the method of treatment of cholecystitis with cholelithiasis.

Journal of State Medicine, London

39: 249-310 (May) 1931

Prevention of Industrial Diseases. E. L. Collis.—p. 249.
Development of Pulmonary Tuberculosis and Differential Diagnosis. O. Amrein.—p. 257.
Psychology and Tuberculosis. H. Banister.—p. 267.
Early Phases of Tuberculosis and Their Treatment. J. Gravesen.—p. 275
Health of Dockyard Workers. H. D. Drennan.—p. 281.
Home and the Adolescent. Doris M. Odlum.—p. 288.
Antenatal Treatment in Connection with Venereal Disease. Olive B. Sharp.—p. 295.
Bacteriologic and Public Health Notes. E. G. Rawlinson.—p. 300.
Chemical and Toxicologic Notes. A. W. Stewart.—p. 303.

Journal of Tropical Medicine & Hygiene, London

34: 117-128 (May 1) 1931

Yaws Incidence in South Pacific. S. M. Lambert.—p. 117.
Some Observations on Certain Species of Monilia. G. Zepponi.—p. 122.

Practitioner, London

126: 481-584 (May) 1931

*Etiology of Rectal Tumors in Relation to Treatment. C. Gordon-Watson.—p. 481.
*Treatment of Internal Piles. J. P. Lockhart-Mummery.—p. 495.
*Anorectal Fistulas: Classification, Pathology and Treatment. W. E. Miles.—p. 501.
*Common Type of Chronic Colitis Which Is Seldom Recognized. A. Castellani.—p. 537.
Diagnostic and Prognostic Value of Electrocardiograph. G. E. S. Ward.—p. 546.
Physiologic Principles in Treatment of Asthma. R. J. S. McDowall.—p. 559.
Exercise and the Medical Man. A. Abrahams.—p. 566.

Etiology of Rectal Tumors.—Gordon-Watson traces the early history of carcinoma of the rectum and its relationship to simple adenoma and emphasizes the importance of regarding an innocent tumor as potentially malignant. He believes that every surgeon who writes on the subject of cancer of the rectum is in duty bound to lay emphasis on early diagnosis, because every surgeon who sees much of this disease recognizes that hundreds of lives are lost annually through failure on the part of the patient to report his troubles, or the practitioner to recognize their cause. Attention is called to the fact that lymphatic spread does not occur until the growth has penetrated the muscular wall of the bowel, that when a carcinoma arises there is an area of potential malignancy in the mucosa beyond the limits of the existing growth, and that though, in early cases local resection or interstitial radiation, if successful, may confer a great boon on the patient by avoiding a colostomy, in the present state of knowledge "safety first" puts a preminum on radical surgery even in the earliest cases. In few, if any, parts of the body is radical surgery for malignant disease more permanently successful when the disease is recognized and treated early.

Treatment of Internal Hemorrhoids.—Lockhart-Mummery states that there are at present two main methods of treating internal hemorrhoids; namely, (1) by the injection of phenol into the substance of the hemorrhoids and (2) by removal of the hemorrhoid by operation. Both these methods give satisfactory results, but it is a mistake to suppose that the injection treatment is a substitute for operation or that any case of hemorrhoids can be treated by either method. While the injection treatment of hemorrhoids, if properly carried out in a suitable case, will completely cure the patient, the results are not permanent and the vast majority of patients get a recurrence of the condition in the course of a few years, when further injections or an operation becomes necessary. It is often claimed for the injection treatment by certain enthusiasts that the results are as good as operation or even better; but this is not so. The records of treatment by injection, which go back over half a century and which number many thousands, show clearly that recurrence in a few years is the rule and not the exception. The treatment should be reserved for cases that are particularly suitable for injection and for those in which there may be objections to operation. The injection treatment is suitable treatment in old people, in patients with some other disease that contraindicates operation, in pregnant women, and in busy people who are unable to spare the necessary time to undergo an operation and who wish to be relieved for the time being with the minimum of inconvenience. The injection treatment is unsuitable in young persons, when the hemorrhoids are large and prolapse easily, when one or more of the hemorrhoids cannot be made to stay up in the rectum when replaced, and when there are complicating conditions, such as fissure, fistula and polypus. Contrary to what is often supposed, the injection treatment of hemorroids requires a considerable amount of skill and judgment to obtain a successful result and to avoid causing pain to the patient. The actual injections are not painful, and if properly carried out there should be no pain or even serious discomfort afterward. The method, however, is not an easy one that can be carried out by any one; it requires a great deal of practice, and attempts to treat patients by this method from book descriptions are liable to bring discredit on the treatment and on all concerned. It is not at all a new treatment, as some people seem to think. It has been in use at St. Mark's Hospital, London, for over sixty years, and many thousands of patients have been treated during this time. The author believes that it was certainly in use in America in 1871, if not before.

Anorectal Fistulas.—Miles objects to the universally adopted classification of anorectal fistulas into three groups (complete, blind external and blind internal) because it conveys the impression that they are varieties of a single type differing only in degree and therefore equally amenable to treatment by the simple surgical procedure of laying open the fistulous track completely from the external opening to the internal opening and allowing the resulting wound to heal progressively from the bottom. There is no doubt that many fistulas can be completely cured by this simple procedure, and yet it frequently happens that when carried out in some instances disastrous results ensue as the result of loss of control over the anal outlet. The explanation of these widely divergent results is that there are several types of fistulas differing in the anatomic relationship of the track to the various muscles controlling the anal outlet. Every fistula is preceded by an abscess and the main track of the fistula is the contracted but unobliterated original abscess cavity. The anatomic site of the original abscess, therefore, determines the type of the fistula. The abscesses that precede fistula formation are the result of a septic focus in the terminal portion of the rectum, which extends by means of the lymphatics. The lymphatic system of the rectum consists of two plexuses, the submucous and the intermuscular, the efferents from which communicate with the lymph sinus of the rectum, a space existing between the external muscular coat of the rectum and the perirectal fatty tissue and the subcutaneous perianal lymphatics. The efferents from the anal canal also pass through the fatty tissue of the ischiorectal fossa on their may to Alcock's canal. As the result of sepsis within the rectum an abscess may form in any of the foregoing situations, and since the anatomic site of the abscess determines the type of the resulting fistula the following classification of anorectal fistulas seems to be anatomically advisable: (1) The subcutaneous, (2) the submucous, (3) the intermuscular (between the muscular coats), (4) the pararectal (situated in the lymphatic sinus), (5) the subsphincteric, and (6) the ischiorectal. Each of these types may present incomplete, complete and bilateral varieties.

Chronic Colitis.—For some years Castellani has called attention in various publications to a type of chronic colitis which, although quite common, is seldom recognized; namely,

the chronic colitis due to the group of intestinal bacteria which he called "metadysentery bacilli." This colitis, though frequent, is so little known that he calls attention to it once more, giving a brief general account of the condition.

Quarterly Journal of Medicine, London

24: 285-446 (April) 1931

*Blood Platelet: Clinical Significance. W. MacKay.—p. 285.
*Some Observations on Circulatory Mechanism in Marathon Runners. C. Bramwell and R. Ellis.—p. 329.
*Urticaria: Some Observations on Vascular Reactions in Skin. K. E. Harris.—p. 347.
Generalized Myositis Fibrosa. J. A. G. Burton, J. Cowan and J. Fleming.—p. 369.
Inorganic Constituents of Cerebrospinal Fluid: Calcium and Magnesium. R. A. McCance and Elsie Watchorn.—p. 371.
Arsenobenzol Purpura: Four Cases. J. Bamforth and J. St. G. Elkington. —p. 381.
Metabolism of Calcium and Phosphorus and Parathyroids in Health and Disease. D. Hunter.—p. 393.

Clinical Significance of Blood Platelets.—From a review of the literature (226 references) dealing with blood platelets and from examinations of the blood made in a series of six healthy persons and seventy-four patients, MacKay concludes that the number of platelets in the circulation is no guide to the rapidity with which coagulation occurs. Clotting of blood depends primarily on the plasma, and the influence of the platelet is of minor importance. Increase in the number of pletelets does not induce thrombosis. Retraction of the clot is not proportional to the number of platelets in the blood. It depends on the blood plasma and the blood platelets. The former is the more important. Thrombocytopenia may be present in the absence of spontaneous capillary hemorrhage or prolongation of bleeding time. Spontaneous capillary hemorrhage and prolongation of bleeding time may exist in the presence of platelets in increased numbers. Bleeding time varies within wide limits when the platelets are constantly diminished. It also varies with the site of puncture. The capillary resistance test is of doubtful value. The most important factor in controlling spontaneous capillary hemorrhage or duration of bleeding time is not the number of blood platelets in the circulation but the ability of the vessel wall to contract. The hemorrhages of purpura hemorrhagica are due to defect in the capillary walls. Blood platelets are not responsible for the phenomena observed in anaphylactic shock.

Circulatory Mechanism in Marathon Runners.—Bramwell and Ellis examined a group of twenty-eight marathon runners clinically, roentgenologically and electrocardiographically during the final stage of training for the Olympic Games. Compared with other Olympic runners they were older men, of a more phlegmatic temperament, generally of lighter build, and their resting heart rate was slower. The question of oxygen requirement, oxygen intake and oxygen debt is discussed in relation to different types of running, and it is suggested that the smallness of their oxygen debt probably accounts for the absence of distress in many marathon runners. A consideration of the probable assets and liabilities of the body points to a shortage of glycogen being one of the most important factors in determining the limits of endurance in the marathon. The hearts of marathon runners were found to be relatively larger than those of any other group of athletes examined. This is all the more striking, since they are the smallest men. The significance of this observation and the possible fallacies in the roentgen measurement of heart size are discussed. Five of the first seven places in the race were taken by men whom the authors had previously examined. There was no constant physical finding that would serve to differentiate these successful athletes from the less successful competitors.

Urticaria.—According to Harris, the main difference between the persistent and giant forms of urticaria lies in the amount and type of a toxic body in the blood; that the giant cases have a much more potent type than the persistent cases, and that, therefore, much more H-substance (Lewis) is liberated in the skin, resulting in fuller whealing. Support is given to this hypothesis by the positive transference tests in only the giant cases. The eruption in spontaneous urticarias resembles the triple response of skin to injury, which is due to the release of histamine or H-substance from the skin cells. Transference tests have yielded results that suggest that a toxic body is circulating in the blood and that, whatever its nature and origin, it acts by producing a definite skin reaction, known as spontaneous urticaria.

Annales de l'Institut Pasteur, Paris

46: 373-481 (April) 1931

*Mechanism of Experimental Tuberculous Infection. A. Boquet, J. Valtis and A. Saenz.—p. 373.
Tuberculosis from Natural Contamination in Rabbit. E. Coulaud.—p. 424.
Active Antitoxic Immunization: Intensive Production of Tetanus Antitoxin in Horses. G. Ramon, P. Descombey and E. Lemétayer.—p. 444.
Malaria: Epidemiologic and Prophylactic Investigations. E. and E. Sergent, L. Parrot, H. Foley, A. Catanei and G. Senevet.—p. 457.
New Pathogenic Bacteria for Maize Pyralid. S. Métalnikov, J. Ermolaeva and Skobelzyne.—p. 467.
Comparison of Resistance of South African and American Maize to Infection with Pyralid. T. Ellinger and V. Chorine.—p. 480.

Mechanism of Experimental Tuberculous Infection.—According to Boquet and collaborators, who studied the mechanism of experimental tuberculosis, the tubercle bacilli that are inoculated into the guinea-pig or rabbit penetrate first through the lymphatics and then through the blood vessels, finally depositing themselves in the viscera. The duration of this first phase of tuberculous infection (stage of lymphohematogenic bacillary dispersion) varies with the route of inoculation, the number of inoculated bacilli and their virulence. In the massive infections, regardless of the route of infection, the bacillemia develops in the first hour after inoculation; it increases afterward progressively and persists until death. The visceral lesions that form from the initial hematogenic dispersion of the bacilli become finally the source of an adjacent superinfection through the lymphatic route and of a remote superinfection through the vascular one. They extend rapidly and become generalized in a short time. Unless the animals are inoculated by a moderate or weak dose, the tubercle bacilli in a few minutes or hours attack the regional lymph nodes. Some tissues, as the pulmonary parenchyma and serous membranes, appear more favorable than the connective tissue for the hematogenic dispersion of tubercle and paratubercle bacilli, depending especially on the extent of the surface of absorption. This explains the seriousness of the pulmonary, pleural or peritoneal primary infection in comparison to the subcutaneous or digestive infection. From the fact that dead tubercle bacilli and paratubercle bacilli are disseminated the same way as living tubercle bacilli, though in much smaller numbers, one may conclude that the initial hematogenic dispersion of all these bacilli depends much less on their pathogenic properties than on their number and their fatty structure. The bacillemia represents therefore an epiphenomenon of tuberculous infection and not of one of its essential bacteriologic aspects. But its intensity and duration are closely connected with the virulence of the bacilli; in other words, with their tendency to multiply in the tissues in which they were deposited. In some circumstances, especially in the infection produced by the ingestion of a small quantity of virulent bacilli, the bacillemia may be so slight and late that the immunity acquired by the organism during the incubation period counteracts its effects. The visceral changes of which it is the source do not manifest themselves until after a long interval; they remain afterward localized more often in one single organ, in which they propagate through the lymphatic route and by the coalescence of the foci. Sometimes the lesions develop even in the lymphatic system, thus causing the type of the latent or occult infections that constitute the lowest form of natural tuberculosis in man and animals.

Journal de Chirurgie, Paris

37: 321-480 (March) 1931

*Surgical Treatment of Sellar and Suprasellar Tumors. T. de Martel, J. C. Denet and J. Guillaume.—p. 321.
*Chronic Encapsulating Peritonitis: Case. P. Wilmoth and J. Patel. —p. 341.
Carpal Sheath Phlegmons: Treatment by Interrupted Lateral Incisions. R. Leibovici and M. Iselin.—p. 358.

Surgical Treatment of Sellar and Suprasellar Tumors.—De Martel and collaborators describe the technic of a brain tumor operation. They discuss the various methods of approach and approve of the tendency of American surgeons to abandon the transsphenoidal route in the removal of adenomas of the

hypophysis. They state that a pure infundibular syndrome may be observed, as well as one resulting from the inevitable compression of the right frontal lobe. Besides, mental disorders generally are in proportion to the extent of frontal lobe compression, which varies from one patient to another.

Chronic Encapsulating Peritonitis: Case.—Wilmoth and Patel discuss a case of chronic encapsulating peritonitis. They operated on a patient with a tentative diagnosis of fibroma of the uterus complicated by salpingitis. They incised the peritoneum and found a large white coating of fibrous tissue enveloping an extensive segment of the intestine. After almost total removal of this false membrane there was considerable improvement in the patient's health, which was maintained for eight months after the operation. They state that similar cases have been reported by German surgeons. Microscopic examination of such a false membrane reveals the presence of intraperitoneal tuberculosis. In only three of thirty reported cases of chronic encapsulating peritonitis was tuberculosis not proved. Therefore the authors admit that they have no right as yet to affirm that there is another special form of tuberculosis.

Nourrisson, Paris

19: 65-144 (March) 1931

Modern Hospital for Children. J. Renault.—p. 65.
*Influence of Ultraviolet Rays on Lactation. E. Lesné and G. Dreyfus-Sée.—p. 90.

Influence of Ultraviolet Rays on Lactation.—In fifteen cases of insufficient lactation, Lesné and Dreyfus-Sée treated the breasts of the mothers with ultraviolet rays. In ten cases the results were favorable; in the remaining five no improvement in lactation occurred. They reach the following conclusions: Breast irradiation is a practical method which excites in insufficient lactation a condition of increased lactation. It does not change the chemical composition of the milk but adds to it qualitative biologic characteristics with an antirachitic factor. The method needs further investigation.

Paris Médical

1: 345-360 (April 11) 1931

*Cancer Chemistry: Physicochemical and Chemical Modifications of Plasma and Serum in Cancer Evolution. J. Loiseleur.—p. 345.
Acute Scarlatinal Nephritis: Action of Squill Glucosides. A. Stroe and P. Klinger.—p. 357.

Cancer Chemistry.—Loiseleur does not draw any definite conclusions from his experiments with cancerous and precancerous tissues. He states that among the transitory elements of metabolism the lactic acid content of the blood seems, in general, augmented, at least in the blood which passes through the tumor. Investigators who study the changes in the composition of the serum must bear in mind, as it is firmly established, the frequent alteration of the stability in the growing cancer with no unavoidable or specific characteristics. Besides the cancer question one observes often especially interesting manifestations in persons of mature and advanced age in whom there exists a soil with already modified main or additional changes, without any reaction to the corresponding process as is the case with cancer. If the practice of actual reactions (reactions of flocculation or of the absorption of the diastases) must be abandoned, should this negative result be definitely registered and specific blood changes renounced as long as the disease is in an imperceptible stage and localized in a tissue which neither chemical analysis nor humoral methods could differentiate from healthy tissue? The answer seems negative unless some new method (determination of the p_H or the iso-electric point) allows one to establish with some certainty the presence of a specific precancerous soil. The author thinks that one has to explain all these negative results by the want of sensibility in physicochemical technic of the investigations: the German authors Krebs and Kubowitz, however, have not been more successful by employing a biologic test and did not find, with Warburg's technic, much difference in operating with normal or with cancerous serum. In the present stage of this question neither the pathogenesis nor the diagnosis of cancer permits one yet to find indications of specific modifications of the properties of the serum of cancerous persons, at least as long as new specifications would not be reported on the subject of blood in the precancerous stage and on experimental cancerization.

1: 361-388 (April 18) 1931

*Sulphur Waters: Cardiovascular Action: Pharmacodynamic Researches. M. Villaret, L. Justin-Besançon and R. Boucomont.—p. 361.
Precordial Anguish: Crenotherapeutic Suggestions. G. Giraud.—p. 370.
Speed of Erythrocytic Sedimentation in Rheumatism and Its Changes in Course of Thermal Treatment. J. Forestier and A. Certonciny.—p. 374.
Dietetic and Hydromineral Treatment of Urinary Uric Acid Lithiasis: Urine Reactions. R. Stieffel.—p. 379.

Research on Sulphur Waters.—Villaret and collaborators report some experiments, emphasizing the fact that their work was done in pharmacodynamics and not in physiology. Their object was to prove that the effects of mineral waters must be studied by biologic methods. They claim to have succeeded in clearly separating different vascular effects of the alpine type of sulphur water administered intravenously to a dog. They also proved that in the first phase the water causes vagus stimulation. It was also shown that the action on the vagus affects the main centers and not the peripheral terminations. In dogs brought preliminarily by choline derivatives to a hypotensive state, the authors clearly isolated a second hypertensive phase of cardiovascular action due to these sulphur waters. Finally with the aid of further experimental work with yohimbinized dogs they proved that this secondary hypertension does not increase the secretion of the suprarenals. In general their conclusions indicate that the technics which serve in the study of pharmacodynamic substances are applicable to experimental hydrology. They reveal the differences in many actions of diverse mineral waters.

1: 389-404 (April 25) 1931

Aorticogastric Syndrome in Syphilitic Persons. P. Harvier and J Caroli.—p. 389.
*Allergy in Tuberculosis. A. Lumière.—p. 393.
Feeding in Patients with Surgical Tuberculosis. T. Garophalides.—p. 397.
Ulcerative Radiodermatitis of Balanopreputial Region: Treatment by Electrocoagulation. H. Bordier.—p. 401.

Allergy in Tuberculosis.—Lumière's studies of allergy in tuberculosis lead him to make the following conclusions: The allergic state consists in the acquisition, through humoral fluids, of a peculiarity of an anaphylactic type, conferred by the products of bacillary origin. This peculiarity makes the subjects who are impregnated by these products for the first time to react afterward to a second impregnation, which is not tolerated and tends to be expelled. This constitutional immunity is noted among infected persons as well as among those who receive only bacillary proteins without living bacteria. If allergy does not always serve as a sign of infection, it is still invariably a mark of an anaphylactic condition and of resistance to a new inoculation. The predisposing power which is wrongly attributed to allergy leads to a state in which not enough distinction is made between allergy and infection. It is the infection which predisposes to new bacillary attacks.

Revue de Chirurgie, Paris

50: 63-118 (Feb.) 1931

*Splenectomy. H. Godard and C. Palios.—p. 63.
Traumatic Dislocation of Knee. P. Guedj.—p. 98.

Splenectomy.—Godard and Palios have done research work on the humoral function of the spleen and made some surgical deductions. Their experience convinces them of the seriousness of splenectomy and the existence of a secretion which is directly due to the spleen, whose suppression leads to general disorders and particularly postoperative anemia. This humoral action probably depends on the physiology of the splenic reticuloendothelial system, which explains at the same time the intensity of this phenomenon and the relative ease with which the humoral function is replaced.

50: 119-195 (March) 1931

*Urgent Cholecystectomy in Acute Lithiasic Cholecystitis: Thirty-Nine Cases. R. Bauer and A. C. Hakki.—p. 119.
Appendicitis and Typhilitis. A. Pellé and A. Folliasson.—p. 146.
Metacarpophalangeal Dislocations: Incomplete and Recurrent Forward Dislocation of Thumb. L. Weitzel.—p. 158.
*Treatment of Tetanus. R. Kaufmann.—p. 174.

Cholecystectomy in Acute Cholecystitis.—Bauer and Hakki have performed in the last six years thirty-nine cholecystectomies. The results favor an urgent cholecystectomy, which is the treatment of choice in acute lithiasic cholecystitis. Five deaths have been recorded: two from postoperative emboli,

one from acute nephritis, one from pulmonary engorgement and one from a secondary hemorrhage. The rest of the patients operated on recovered with no complications and left the hospital on the twenty-fifth day, on the average. Discussing the objections for an early cholecystectomy, the authors consider the patient's age, the possibility of peritoneal involvement (in severe cases), secondary hemorrhages and adhesions. They never observed a postoperative secondary peritonitis after a cholecystectomy and they believe that in all cases of cholecystitis it should be preferred to cholecystostomy. Even if the bile remains sterile, the walls of the gallbladder and biliary tracts are practically always infected. The mortality is the same following delayed and early operations. The authors point out that there are only a few exceptions to this rule. They conclude that the time is nearing when acute cholecystitis, as is the case of acute appendicitis, will be treated surgically at the onset of the disease; cholecystostomy will not have many if any indications.

Treatment of Tetanus.—After studying cases of tetanus and after using different methods of treatment, Kaufmann draws the following conclusions: His judgment in the treatment of tetanus is not based on a large enough scale of observations. The curative serotherapy in this condition should be made through the intraspinal route under general chloroform anesthesia after withdrawal of an amount of cerebrospinal fluid equal to the one injected (maximum 60 cc. = 30,000 units of serum). Afterward, the patient has to be put in bed and treated under the usual rules of hygiene in tetanus patients: isolation, chloral hydrate (up to 10 Gm. daily), morphine (0.04 Gm.) or some other hypnotic. Dextrose acts favorably in tetanus.

Schweizerische medizinische Wochenschrift, Basel

61: 369-392 (April 18) 1931

Psychology of Scientific Work. W. Knoll.—p. 369.
Professional Orientation. W. Froelich.—p. 371.
Differential Diagnosis of Pericardial Adhesions. M. Grossmann.—p. 372.
Incontinentia Urinae Caused by Foreign Body in Bladder. R. Meyer-Wildisen.—p. 377.
*Contraindications to Morphine in Circulatory Therapy. E. Attinger.—p. 377.

Contraindications to Morphine in Circulatory Therapy.—Attinger first reminds the reader that morphine has a favorable influence in cases of circulatory insufficiency. Morphine has no unfavorable effect on the heart, and therefore it is indicated when dyspnea, insomnia or psychic unrest prevent the quieting of a patient. Comparatively often, cases are noted in which digitalis fails to be effective until the patient has been quieted by means of morphine or by diallylbarbituric acid. However, there are also certain contraindications to the use of morphine in the treatment of circulatory disorders. Morphine is contraindicated in all cases of circulatory insufficiency in which a tendency to edema formation exists, for it is known that morphine checks the elimination of urine. The author reports the case of an edematous patient with severe heart disease and arteriosclerosis to whom he administered morphine in order to overcome insomnia. During the time when morphine was given, diuretics and other measures to overcome the edema were without effect, but as soon as the morphine injections were discontinued diuresis set in and the edema disappeared. Since this time the author has employed diallylbarbituric acid rather than morphine, whenever a tendency to edema formation was noted. A second contraindication to the use of morphine is angina pectoris, for it is probable that morphine constricts the coronary arteries.

Clinica Medica Italiana, Milan

62: 203-308 (March) 1931

Physicochemical Researches on Blood Serum in Nephropathies, Hypertension and Active Pulmonary Edema in Man and Experimental Animals. M. Pisa.—p. 203.
Significance of Spleen in Production of Antibodies and in Bacteremic States. M. D. Palma and V. de Antoni.—p. 216.
*Experimental Researches on Acholic Cachexia. G. Pennetti.—p. 230.
Systematic Study on Relations Between Volume and Osmotic Resistance of Red Corpuscles. R. S. Douglas and G. Dondi.—p. 254.
Pollinosis. V. Scimone.—p. 280.

Experimental Researches on Acholic Cachexia.—Pennetti concludes from experiments on large dogs that the exclusion of the bile from the intestine (with a fistula of the gallbladder and previous ligation of the common bile duct, or merely with the ligation of the common bile duct) causes a condition of cachexia that may be appropriately termed "acholic." It is accompanied by decalcification of the bones, with low calcemia when the animal is in a grave condition, a tendency to hyperglycemia and an acidotic state. There is observable, furthermore, an anemia of an aplastic type that develops relatively early and a neutrophil granulocytosis with relative lymphopenia. While recognizing the importance of the disturbance caused by the absorption of fats that takes place in the intestine in the absence of bile, the author thinks that it is not due simply to a deficiency of vitamins, as Takasu especially has contended, but to multiple causes, such as the dispersion of calcium through the bile, the intestinal putrefactive processes, the development of the bacterial flora and the grave autophagia.

Giornale di Clinica Medica, Parma

12: 317-392 (April 10) 1931

*Diagnostic Value of Painful Dorsal Spot in Appendicitis. D. Campanacci and A. lo Jacono.—p. 317.
Extensive Subcutaneous Emphysema with Pneumothorax Due to Pleural Acupuncture. F. Giugni.—p. 325.
Trauma and Pluriglandular Diabetes. G. Alberti.—p. 331.

Diagnostic Value of Painful Dorsal Spot in Appendicitis.—Campanacci and lo Jacono study the clinical diagnostic value of a dorsal pain spot described by Campanacci in 1927 in cases of appendicitis, as compared with other recognized pain symptoms. They studied the behavior in new cases of various origin and in various stages of development, taking account of the clinical data, the roentgen observations and the operative manifestations. On the basis of their inquiry, they became persuaded of the great frequency of the positivity of the dorsal pain symptom in fully established cases of appendicitis—not only acute but also chronic cases (80 per cent positive). Such frequency was exceeded only by McBurney's point (85 per cent positive). The importance of the dorsal pain point lies chiefly in the fact that it is the only pain point of posterior projection and that in some cases an accurate and systematic examination of the abdominal points is impossible. In some cases, too, all the anterior points remain mute and only the dorsal point serves to give warning. Only additional research will establish the genesis of this point, in the right lumbodorsal region. Possibly it is due to a reflex cutaneous neuralgia of appendicular origin, according to the conception of Head.

Pediatria, Naples

39: 401-456 (April 15) 1931

*Congenital Ureteral Enuresis. M. Monticelli.—p. 401.
Cyclic Vomiting and Syphilis. A. Genoese.—p. 426.
Erythrocytic Resistance in Tuberculous Children Subjected to Liver Therapy. G. di Maggio.—p. 436.

Congenital Ureteral Enuresis.—Monticelli reports two cases of congenital ureteral enuresis in twin girls, aged 6, when admitted to the ambulatorium with a history of having had enuresis day and night since their birth. The treatment prescribed by various physicians brought no improvement. The mother died from sepsis following the twin birth. She had had nocturnal essential enuresis up to the age of 16. In the twins there was marked lordosis. The lordosis associated with incontinence, and the presence of enuresis in the mother pointed to a possible enuresis due to myelodysplasia, and the author was assigned the task of studying the cases. He found that the urine contained no pathologic elements; the secretion of urine was regular and micturition occurred five or six times a day without disturbance. But he discovered a few drops of urine flowing apparently from the urethral meatus from time to time. Roentgen examination revealed that there was no vertebral malformation corresponding to the marked lordosis. The fact that the urine dripped constantly, day and night, although micturition was normal as to frequency and quantity, led the author to suspect some organic malformation of the urinary passages. A roentgenogram taken after injection of an opaque substance did not reveal a malformation of the urinary passages. A urologist reported also that ureterocystoscopy was negative for any malformation of the urinary passages. The conclusion was thus forced that it was a question of essential enuresis probably due to hypotonia of the bladder sphincter. The author suspected nevertheless an anomalous ureteral orifice. Close examination revealed that the skin of the thighs and the surface

of the labia majora were moist and irritated. Over the whole mucosa was spread a thin layer of colorless fluid. From time to time, in the posterior commissure, fluid collected in a large drop, which then slipped into the perineum. The urethral meatus was of normal appearance and its lumen was well closed; but the mucosa of the upper margin of the hymen presented in both patients small openings in the furrows, and it was discovered that the drops of urine were evacuated from the minute openings in the mucosa and not from the urethral meatus. The mucosa was lifted up a little and the sulcus took on the appearance of a minute orifice, which opened four or five times in from ten to thirty seconds and discharged four or five drops of urine and then closed its lips without leaving a trace of the existing malformation. The author assumed the presence of a supernumerary ureter. Roentgen examination then fully confirmed in both twins the clinical diagnosis of an anomalous orifice of a supernumerary ureter. The treatment of congenital ureteral enuresis is always surgical and will vary with the clinical picture. Suture or resection of the anomalous ureter is the easier but the less safe form of intervention because there is left in the abdominal cavity a dilated urinary tube that may cause serious disturbances. The methods most used and the safest are ureterocystoneostomy, with implantation of the abnormal ureter in the bladder, and nephrectomy.

Policlinico, Rome

38: 543-578 (April 20) 1931. Practical Section

*Combined Use of Epinephrine and Ephedrine in Surgery. G. Giordanengo.—p. 543.
Ancylostomiasis Simulating Gastric Neoplasm. M. Mangiola.—p. 550.

Combined Use of Epinephrine and Ephedrine in Surgery.—Giordanengo reports that, from the results secured during trials of the combined use of epinephrine and ephedrine, he feels justified in affirming that it constitutes a suitable means of combating the more common states of surgical hypotension (operative, from anesthesia, shock), and that its value results from the rapid and immediate action of epinephrine combined with the more enduring effects of ephedrine. It has been found especially valuable in combating hypotension and the disturbances of bulbar origin produced by spinal anesthesia. Excellent results have been observed in operative and postoperative collapse.

38: 579-614 (April 27) 1931. Practical Section

*Technic of Rapid Cholecystography. C. Antonucci.—p. 579.

Technic of Rapid Cholecystography.—Antonucci obtained early cholecystograms by combining with tetiothalein sodium a solution of dextrose and sometimes a suitable amount of insulin. He employed from 2 to 3 Gm. of tetiothalein sodium in 125 cc. of a 40 per cent solution of dextrose, injecting intravenously the quantity of tetiothalein sodium plus 50 Gm. of dextrose. From two to seven days previously the subjects received a diet poor in carbohydrates, their meals consisting of broth, eggs and meat. Good visibility was obtained in one hour and a maximum concentration two hours after the injection. With the doses that he employed, the disturbances (sweating, feeling of general weakness, dizziness) are slight—not more accentuated than with the ordinary mode of administration; but it might be different if the doses of tetiothalein sodium were increased. It would be well, therefore, to study experimentally whether, and if so to what extent, the combination of dextrose and tetiothalein sodium serves to increase the toxic effects of the tetiothalein sodium.

38: 161-212 (April 15) 1931. Surgical Section

Echinococcus Cysts of Tail of Pancreas. G. Cairo.—p. 161.
*Traumatic Fractures of Acetabulum and Central Dislocation of Femur. P. Frassineti.—p. 174.
Filtrable Osteomyelitic Virus. V. Jura.—p. 184.
Duodenal Diverticulum. L. Mollo.—p. 201.

Traumatic Fractures of Acetabulum and Central Dislocation of Femur.—Frassineti presents a case of fracture of the acetabulum that, although there appeared to be a frank symptomatology of central dislocation of the femur, presented a roentgen picture that excluded, strictly speaking, such dislocation. It was a compound fracture due to crushing of the acetabulum. He examines into the various opinions and judgments given of the various experimental results secured from the standpoint of the etiopathogenesis of fractures of the acetabulum, with or without endopelvic dislocation of the femur, and gives his own opinion, which is expressed in these words: What causes a fracture of the acetabulum rather than some other lesion of the skeleton is a trauma that acts on the site of the implantation of the neck of the femur with a direction parallel to the longitudinal axis of the neck itself, irrespective as to whether the femur is in abduction or adduction. He discusses the symptomatology of these fractures, dealing with the most common clinical picture of a fracture with endopelvic dislocation of the femur and points out the great similarity with the symptomatic aspect of the lesion in question. He considers also the roentgen aspects of the various kinds of acetabular fractures and possible endopelvic femoral dislocations, and describes minutely the roentgen aspects of the case in hand. In his opinion, the best method of treatment is that devised and recommended by Putti.

Riforma Medica, Naples

47: 513-552 (April 6) 1931

Adiposity and Hypophyseal Cachexia. F. Boenheim.—p. 515.
Typhus of Mediterranean Region. L. Cannavò.—p. 517.
*Decalcification of Carpus Resulting from Streptococcus Infection: Case. P. del Torto.—p. 520.
Spontaneous Rupture of Spleen: Case. V. C. Demel.—p. 522.

Decalcification of Carpus Resulting from Streptococcus Infection.—Del Torto describes a case of decalcification of the carpus resulting from streptococcus infection (Sudeck disease) that came under his observation. A man, aged 70, developed a phlegmon of the hand, as the result of a puncture wound. Six weeks from the beginning of the infection, a roentgenogram was made that revealed complete peripheral atrophy of the carpal bones. Decalcification and bone changes were likewise manifest in the first three metacarpals. Thirty months later, a second roentgenogram revealed the recalcification of these bones, which, although they presented a malacic aspect, were nevertheless clearly recognizable.

Archivos Arg. de Enf. d. Ap. Digest. etc., Buenos Aires

6: 385-608 (Feb.-March) 1931. Partial Index

*Dietetic Treatment in Diabetes Mellitus: Insulinotherapy Governed by Glycemia. A. Raffo.—p. 415.
*Recurrent Hepatic Colic Caused by Hepatobiliary Tertiary Syphilis. E. S. Garré and M. Boix Pou.—p. 513.
*Total Colectomy: Late Functional Results in Three Cases. D. del Valle, Jr., and J. C. Bidart Malbrán.—p. 541.

Dietetic Treatment in Diabetes Mellitus. — Raffo obtained good results in diabetes mellitus by a well balanced ketogenic antiketogenic diet and insulin therapy aiming to maintain a normal glycemia. He studied the qualitative and quantitative aspects of the diet. The limitation of food and functional rest given to the pancreas are the fundamental principles. The diet should be complete, however, and should include proteins, carbohydrates, fats, salts and vitamins. It should be adapted to the metabolic requirements of the individual. Insulin has better effects than any other drug. The author made experiments to determine the activity of several brands of insulin. All the samples had been prepared four or five months before, as stated on the label. The activity of all the samples was analyzed and found to be similar. The author concludes that by the administration of the proper diet and insulin to diabetic patients their tolerance to carbohydrates increases. Ambulatory treatment should be given only to patients who follow closely the diet and orders of the physician. The maintenance of a normal glycemia should be the desideratum. The best results of insulin therapy are observed in patients with benign forms of diabetes. The same benefit may be reasonably expected from insulin therapy in all cases of diabetes, regardless of the severity of the pancreatic lesion whenever the patient receives good treatment early. In spite of the great benefit which most patients receive from insulin therapy, the treatment occasionally fails to stop the evolution of the disease. Normal glycemia is the only condition under which improvement or recovery from complications of diabetes of long evolution may be expected.

Recurrent Hepatic Colic Caused by Tertiary Syphilis.—The patient of Garré and Boix Pou, aged 47, had fever, pain in the right half of the abdomen (simulating biliary lithiasis) and hepatic colic with frequent recidivations. Dietetic and medi-

cal treatment and duodenal intubation failed. At operation (a right transrectal paramesial laparotomy) the biliary tree proved to be normal and there were no calculi. The liver presented the characteristics of tertiary syphilis, with glissonitis, perihepatitis and syphilitic sclerosis. Some adhesions were broken up. The hepatic colic reappeared after operation. Antisyphilitic treatment (sixty injections in three series of twenty injections each of 0.1 mg. of mercuric cyanide and from 1 to 3 Gm. of potassium iodide) resulted in complete recovery. The authors state that the functions of the liver are already impaired in patients with hepatic syphilis; hence the advisability of using as antisyphilitic treatment drugs having the least possible toxic action on the liver, such as mercury, preferably in combination with hepatic opotherapy in the form of injections of hepatic extract. The authors reach the following conclusions: Hepatic colic is a repercussion on the smooth muscles of the biliary passages, of anatomicopathologic alterations of the gallbladder, the bile ducts or the liver. Biliary lithiasis, as frequent as it is, is not the only cause of hepatic colic. Among the diseases of the hepatic parenchyma that may cause hepatic colic, are syphilis, hydatidosis and cancer of the liver. Hepatic syphilis is more frequent than it is believed. In cases in which the clinical picture suggests the presence of hepatic syphilis, the patients should receive sufficient antisyphilitic treatment even though they do not show symptoms of active syphilis, before any operation is planned.

Late Functional Results of Total Colectomy. — Del Valle and Bidart Malbrán state that after colectomy the digestive functions of the patients are compensated until they become normal. The anastomosed segments undergo a dilatation of a functional order which plays a rôle of absorption, storage and of evacuation. Three clinical histories of patients in whom total colectomy had been performed are reported in relation to further observations of late results of the operations. The patients were observed three years and a half, eight years and nine months, respectively, after the operation. In all of them, good therapeutic results were obtained. These cases represent the three principal types of the general technic of intestinal anastomosis in resection of the colon; namely, end to end, side to side and end to side. Both the immediate and the late results were satisfactory. The digestive functions and general condition of all the patients improved. The following roentgen observations were made: Two of the patients did not have a large colon when colectomy was performed. Roentgen examination three and a half and eight years later showed that the terminal segment of the ileum was not greatly dilated, though the dilatation appeared to be sufficient to perform the functions of a normal colon. The remaining patient had megacolon and a constipation of sixteen days' duration when the operation was performed. Roentgen examination in this case, made nine months after the operation, showed great dilatation of the anastomosis. As the technic used cannot be blamed for the results, the authors wonder whether the same cause which brought about the development of the original megacolon is now acting on the intestinal segment, thus causing progressive increase in the size of the segments (which opinion seems to be supported by the reports in the literature on recidivation of sigmoid megacolon), or if the organism of this patient used as it was to the retention of the megacolon reacts in a lesser degree than it should and allows the segments a greater dilatation.

Deutsche medizinische Wochenschrift, Berlin

57: 703-744 (April 24) 1931

Multiple Myelomas. A. Magnus-Levy.—p. 703. C'td.
Heart Diseases and Their Treatment in the Last Fifty Years. E. von Romberg.—p. 708. C'cn.
Therapy with Circulatory Hormone Preparations. R. von den Velden.—p. 712. C'td.
Etiology and Therapy of Thrombosis. O. Butzengeiger.—p. 713.
Treatment of Puerperal Sepsis. H. Ziegeler.—p. 715.
Time Saving Registration Apparatus for Leukocyte Count. K. Kolligs and G. Diehl.—p. 717.
*Cure of Meningococcus Sepsis by Means of Meningococcus Serum. H. Taterka and N. Leitner.—p. 717.
*Surgical or Hormonal Treatment of Cryptorchidism? B. Schapiro.—p. 718.

Cure of Meningococcus Sepsis by Means of Meningococcus Serum.—Taterka and Leitner describe a case of meningococcus sepsis. The patient was in a comparatively good general condition but an intermittent fever persisted for several months, accompanied by several recurrences of a maculopapular exanthem and also arthritic disturbances. A single intramuscular injection of meningococcus serum effected prompt and permanent cure. The authors state that this was the second case of meningococcus sepsis in which they obtained favorable results with meningococcus serum.

Surgical or Hormonal Treatment of Cryptorchidism?—Schapiro maintains that cryptorchidism is in nearly all cases only a partial manifestation of a generalized underdevelopment of the genital organs. He therefore considers hormonal treatment by means of subcutaneous injections of preparations of the anterior lobe of the hypophysis the logical method to overcome the developmental disturbances. Favorable results were obtained in fourteen out of eighteen patients who were subjected to the hormonal treatment. The author thinks that local surgical measures should be taken only in those rare cases in which mechanical obstacles prevent the descent of the testes.

Klinische Wochenschrift, Berlin

10: 721-768 (April 18) 1931

Catalysis by Means of Heavy Metals in Living Tissues. F. Eichholtz.—p. 721.
Serologic Investigations on Twins. F. Schiff and O. von Verschuer.—p. 723.
Action of Ergotamine on Secretory Function of Human Stomach. L. Hess and J. Faltitschek.—p. 726.
*Treatment of Lobar Pneumonia by Means of Convalescent Serum. M. Gundel.—p. 728.
Arterial Hypertension in Obstruction of Voidance of Urine. G. Wüllenweber.—p. 730.
Diagnosis of E Dysentery by Means of Paratyphoid B Bacteriophages. K. Marcuse.—p. 732.
*Influence of Ovarian Hormone (Follicle Hormone) on Susceptibility of Uterus to Hormone of Posterior Lobe of Hypophysis. F. Siegert.—p. 734.
*Influence of Pregnancy, Labor and Puerperium on Alkali Reserve of Blood. J. Burtscher and J. Malfatti.—p. 737.
Objective Examination of Acoustics of Respiratory Organs. K. Posener and F. Trendelenburg.—p. 741.
Biologic Test for Corpus Luteum Hormone. H. Knaus.—p. 742.

Treatment of Lobar Pneumonia with Convalescent Serum.—Gundel thinks that the favorable results that have been obtained with animal serums in the treatment of lobar pneumonia should not prevent investigation of other specific methods. During the last two years he studied the therapeutic value of convalescent serum. His efforts were directed toward the solution of two problems: (1) whether the convalescent serum has therapeutic value, and (2) when the blood contains the most antibodies, that is, during what period of convalescence the serum should be withdrawn. Experiments revealed that animal immune serums are somewhat more effective than convalescent serums; however, it should not be overlooked that a specific therapy with human serum has other advantages over the use of animal serums, such as the avoidance of anaphylaxis and of serum disease. On the basis of his observations the author reaches the conclusion that the convalescent serum is an important factor in the therapeutic armamentarium against lobar pneumonia. He admits that it is neither possible nor advisable to replace entirely the use of animal immune serums. However, he thinks that in large hospitals the treatment with convalescent serum is especially promising. He outlines the technic of this therapy, makes suggestions for the organization that is necessary to make it practicable, and recommends the further investigation of certain bacteriologic and therapeutic problems involved in this treatment.

Influence of Follicle Hormone on Susceptibility of Uterus to Hormone of Posterior Lobe of Hypophysis.—In experiments on virginal rats and guinea-pigs, Siegert investigated (1) how the follicle hormone acts on the uterus that has not been influenced by the hormone of the posterior lobe of the hypophysis, and (2) how it effects the uterus that has been influenced by the hormone of the posterior lobe of the hypophysis. The experiments revealed that the action of the hormone of the posterior lobe of the hypophysis on the uterus is checked or entirely nullified by the follicle hormone. The inhibitory action of the follicle hormone on the uterus is most pronounced when the hormone of the posterior lobe of the hypophysis has not previously acted on the uterus. The follicle hormone and

the hypophyseal hormone both influence the tonus and the contractility of the smooth muscle cell. However, there is an antagonism in the action of these two hormones on the uterus. The action mechanism of the follicle hormone is due to its growth inducing component, which causes changes in the muscle cell. The degree of susceptibility of the uterus toward the follicle hormone can be expressed by a known quantity of the hormone of the posterior lobe of the hypophysis.

Influence of Pregnancy on Alkali Reserve of Blood.—In investigations on the alkali reserve in healthy gravidas by means of van Slyke's method, Burtscher and Malfatti made the following observations: 1. During pregnancy the alkali reserve is reduced. 2. Labor produces a further reduction in the alkali reserve, and this reduction is more pronounced in primiparas than in multiparas. 3. In the first few days of the puerperium there is an increase in the alkali reserve but the increase is not sufficient to produce normal values. 4. Lactation influences the binding capacity of the blood for carbon dioxide and thus becomes manifest in changes in the alkali reserve. Acidosis persists during the puerperium, and it is probable that this is caused by the processes involved in lactation. Tests on one woman with hyperemesis gravidarum and on one with nephropathia gravidarum revealed that in both of them the alkali reserve was below the average of normal gravidas. Septic conditions cause an especially low level of the alkali reserve of the blood.

Wiener klinische Wochenschrift, Vienna

44: 501-532 (April 17) 1931

*New Methods in Treatment of Rickets. K. Huldschinsky.—p. 501.
Principles of a Theory of Alteration in Human Organism. F. Kraus.—p. 505. C'cn.
Pulmonary Edema in Mitral Stenosis. L. Hess.—p. 508.
*Predisposition for Thrombosis. E. Domanig.—p. 513.
Extrapleural Plombierung of Lung. E. Waltuch.—p. 516.
Roentgen Irradiation of Tonsils. O. Mayer.—p. 521.
Basis and Treatment of Hypertonia. J. Pal.—p. 521.
Diagnosis and Therapy of Cancer of Uterus. H. Heidler.—p. 522.
Results and Technic of Roentgen Therapy in Cerebral Processes. K. Goldhamer.—p. 525.

New Methods in Treatment of Rickets.—Huldschinsky states that the principal change in the treatment of rickets in recent years is that the rapid treatment has been more and more abandoned in favor of a slower treatment. It has also been found advantageous to alternate between internal and external application of light; namely, between oral medication with viosterol and irradiation. The author discusses and evaluates several new methods of irradiation. In regard to the oral treatment of rickets it is pointed out that the results obtained with viosterol should not lead to a complete disregard for the old, reliable cod liver oil treatment, for a good cod liver oil has certain advantages over the medication with viosterol.

Predisposition for Thrombosis.—In view of the fact that the incidence of venous thromboses and of thrombo-embolisms has considerably increased in recent years, Domanig stresses that more efforts should be made to determine whether a patient has a predisposition for thrombosis and, if so, to take suitable prophylactic measures. As predisposing factors for thrombosis he mentions local retardation of the blood stream, resting position, advanced age, cardiac and circulatory disturbances, and adiposity. If, as is usually the case, several of these factors concur, the danger of thrombosis and embolism is so much greater. Doubtless there are still other factors, which are the ultimate cause of the thrombosis and embolism in these predisposed patients. Changes in the blood and changes in the endothelium of the vascular walls are probably of primary significance. To prevent venous thrombosis, measures should be taken that will favorably influence the cardiac and circulatory action and counteract the localized retardation of the blood stream. Circulatory disorders should be counteracted by medication with digitalis or with ephedrine preparations and excitants. To insure a complete filling of the vascular system, subcutaneous or intravenous administration of fluids might be necessary. Systematic respiratory exercises, massage, gymnastics and frequent changes in the position of the patient are also advisable. Constipation has to be counteracted. Early rising after an operation as a preventive measure is not favored by the author. With embolectomy according to Trendelenburg's method he was not successful.

Vrachebnoe Delo, Kharkov

13: 1362-1536 (Oct. 31) 1930

Dynamic Classification of Personalities. L. A. Oganesov.—p. 1363.
*Symptomatology of Trichinosis: Fifteen Cases. A. M. Zyukov.—p. 1371.
Gas Content in Blood of Patients with Cardiovascular Diseases. D. J. Zantchevskiy and V. M. Solomyanny.—p. 1376.
Comparison of Bouillon and Alcohol Test Meals in Examination of Stomach Contents by Fractional Method. S. A. Terian and S. Z. Begam.—p. 1380.
Treatment of Malaria by Modified Rubashkin Method: Three Hundred and Fifty-Five Cases. Berlyandt and Jakovleva.—p. 1383.
Vascular Conditioned Reflexes in Man. V. P. Protopopov and N. G. Mirolubov.—p. 1387.
Phytotoxemia in Schizophrenia Patients. L. A. Tcherkes and M. J. Manhubi.—p. 1392.
Autohemotherapy in Schizophrenia Patients. P. P. Volokhov.—p. 1393.
*Retroperitoneal Tumors. J. B. Voytashevskiy and G. S. Ruban.—p. 1401.
Lymphocytotic Index in Clinical Hemotherapy in Infancy. B. F. Shagan.—p. 1409.
Helminthiasis: Its Influence on Anemia in School Children. V. J. Rabinovich and F. J. Yasis.—p. 1414.
*Visceral Syphilis. G. P. Kosman.—p. 1418.
Syphilomas of Iris and Ciliary Body. G. F. Pekhur, A. L. Shakhovskaya and A. A. Panshina.—p. 1423.
*Ten Years of Legalized Abortion in Soviet Union. P. A. Boyko.—p. 1459.

Symptomatology of Trichinosis.—Zyukov describes his observations on trichinosis during the epidemic at Kiev in 1929-1930. He states that the disease was characterized by a marked polymorphism of clinical phenomena. Most of the cases difficult to diagnose were those with a mild course and especially those which occurred sporadically. Many cases were not registered at all because the patients were not ill enough to come to the clinic. The clinical symptoms in the fifteen cases observed by the author were edema of the face and eyelids, rise in temperature, swelling, pain and stiffness of the muscles, Kernig's sign, blood changes with marked eosinophilia, sweating and insomnia. The occurrence of *Trichinellae* in the blood and stools is rare. Among the various remedies that have been proposed for the treatment of trichinosis not one has a specific action. In the very beginning of the disease, cathartics should be used; later, thymol, methenamine or glycerin. Arsphenamine has no value in the treatment of trichinosis.

Retroperitoneal Tumors. — Voytashevskiy and Ruban report a case of retroperitoneal tumor in a woman, aged 22. The tumor was correctly diagnosed only with the aid of additional modern methods of examination. This case is interesting from diagnostic, surgical as well as pathologomicroscopic points of view. The authors state that for the correct diagnosis of tumors of the abdominal cavity one has to employ various methods for the elimination of one group of organs and thus to establish the probability of the involvement of others. A fundamental topographic classification of these tumors is also of importance. The authors designate them as tumors of the abdominal wall, tumors of the abdominal cavity and tumors of the retroperitoneal cellular tissue. They may also be divided into superior, central and inferior tumors of the abdominal cavity. In complicated cases in which diagnosis is difficult one has to perform, besides a roentgen examination of the gastrointestinal tract, also a pyelo-ureterographic examination; the latter will enable one to demonstrate pathologic changes in the kidneys and will indicate the site of the neoplasm and the mutual relations of the viscera. A lateral or medial displacement of the ureter, in the absence of pathologic changes in the renal parenchyma, will indicate a compression and a displacement of the ureter by a tumor or an abscess, which is located, of course, in the same layer of retroperitoneal cellular tissue. In the presence of a tumor in the abdominal cavity the compression occurs in the backward direction and at the beginning gives symptoms of stagnation in the kidneys and later on of occlusion of the ureter. Concerning surgical intervention in these cases, the authors suggest a laparotomy for the centrally located neoplasm, through the gastrocolic ligament in the upper part of the abdomen and through the mesocolon in the lower part. The tumor should be removed intracapsularly to avoid injury of large vessels and subsequent hemorrhage.

Visceral Syphilis.—Kosman states that the recognition of syphilis of the internal organs is at times a difficult task, for many patients do not disclose that they have syphilis or they even forget about it if the primary infection was of a mild

nature. As an illustration of this the author reports the case of a woman, aged 49, who was brought to the clinic in a grave condition. The latter was diagnosed as cancer of the stomach. The past history revealed many, mostly so-called rheumatic ailments for which the patient was treated for years with no apparent results. Most of her complaints in the past were in relation to the large joints and spine. Lately she had vomited persistently. Physical examination revealed an enlarged liver and spleen extending far down from the border of the lower ribs. The liver was tender and hard on palpation. The edge of the spleen was smooth. One could easily feel between the liver and the spleen a tumor with an uneven surface. All these observations, as pain in the abdomen, enlarged spleen and liver, the presence of a neoplasm that could be felt in the region of the stomach, as well as the nervous and toxic symptoms, made the author think of cancer of the stomach and liver with metastases to the brain. On the other hand, the multiplicity of bone and joint involvement with characteristic night crises were in favor of the diagnosis of syphilis. A cautious and slow antisyphilitic treatment was established and in a remarkably short time the patient began to show signs of rapid improvement. Vomiting ceased entirely and the tumor in the stomach region became less and less noticeable until it disappeared. This case is of interest because, notwithstanding the numerous viscera involved in the syphilitic process, the aorta and the rest of the cardiovascular system were not endangered at all. There was a complete picture of syphilis of the bones and joints, the brain, the stomach and the retroperitoneal lymph nodes as well as of the liver and spleen.

Ten Years of Legalized Abortion in Soviet Union.—On the tenth anniversary of the existence of legalized abortion in Russia (Nov. 20, 1930), Boyko makes an extensive survey of it. Russia is the only country in the world in which abortion is legalized and every woman has there the right to request that it should be performed if there are present any indications of a social character. The author recalls the situation in Russia in the prerevolutionary days. The well-to-do classes got the best specialists and the poor people were left to the mercy of ignorant midwives or were left alone entirely without any help whatever. They paid heavily for it, mostly by their lives or by various chronic ailments which developed after unattended labors. The aim of all Russian health departments throughout the country now is to take away the initiative from the criminal abortionists and shift it to the legal channels of a modern hospital. In spite of legalization, for the years 1922, 1923 and 1924 there were recorded in Russia 3,000 deaths from criminal abortion in the small villages of the republic of Russia proper (not of the whole union). The author stresses that these figures are far from complete. The law requires that to every woman who applies for an abortion must be explained the risk of it to her life and future health. There is outlined a definite plan of indications of a social nature for abortion, and the government opened all over the country many so-called abortaries, most of them free. Abortion in Russia is at present accessible to every woman. The following legal changes have been introduced lately: 1. The time limit is three months. If there is any medical indication, no limit in time is necessary. 2. Repeated abortions are not allowed until six months has elapsed since the last pregnancy. 3. The patient has to stay in bed for three days. 4. The attending physician has the right to refuse to perform an abortion and he has to refuse it when he finds a contraindication from the medical side. The legislation on abortion in Russia met a flood of criticism, especially abroad. The claim was that such a law would lead to the degeneration of the nation. The author disproves this assertion, stating that it has no ground whatever. He shows that the birth rate in Russia for each thousand of population was: in 1911 (prerevolutionary), 43.8; 1923 (after the revolution), 42.2; 1924, 42.9; 1925, 44.2 and 1926, 43.2. In 1929 the net increase in population of Russia was 23 for each thousand, while in France it was 1.3, and in England, 3.4. The total increase in population is at present 3½ million yearly. The motives on which abortion is asked for in Russia were as follows: poor economic conditions, 48 per cent; desire to hide pregnancy, in large towns, 0.5 per cent, in country places, 4.1 per cent; various sicknesses, 21.6 per cent; the presence of a nursling in the family, 6.8 per cent; desire not to have a child, around 10 per cent. Legalized abortion is the only means for women's emancipation because there are not yet any contraceptives that prevent pregnancy with certainty.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

75: 2029-2152 (April 18) 1931

Transitory Psychosis Resulting from Debility. L. van der Horst.—p. 2030.
*Familial Splenic Anemia (Gaucher's Disease). C. de Lange.—p. 2037.
Therapeutic Value of Massage and Gymnastics. D. Brocx.—p. 2052.
Intrapharyngeal Insufflation of Nitrous Oxide-Oxygen in Staphylorrhaphy. P. M. E. P. Nyst.—p. 2059.

Familial Splenic Anemia (Gaucher's Disease).—De Lange reports two cases of familial splenic anemia occurring in sisters, aged 3 and 5, respectively. The parents and the other four children were not affected. The 5 year old child had had a large abdomen for a number of years and the liver and spleen were enlarged. She was sometimes unwell, vomited occasionally, and had some abdominal pain. She had lost weight and was never in a lively mood. The child was admitted to the policlinic for observation. The patient was well built and weighed 18 Kg. A low systolic murmur was perceptible in the heart. The spleen was greatly enlarged and felt hard. The liver extended two fingerbreadths below the costal arch. The Pirquet reaction to human and bovine tuberculin was positive. The Wassermann and the Sachs-Georgi reactions were negative. The hemoglobin content was 62 per cent (Sahli); the erythrocyte count was 4,130,000; the leukocyte count was 5,500. The patient was discharged at the end of three weeks. Ten months later the spleen was no larger but the liver had increased in size. The child did not complain of anything. One month later there were various manifestations of a hemorrhagic diathesis. The child often had nosebleed and presented a number of blue spots and also extravasation of blood in the muscles. The hemoglobin content was now 64 per cent, the erythrocyte count 5,000,000 and the leukocyte count 6,050. Four months later the spleen was no larger, and the general condition was good, but the child often had blue spots, according to the mother. Nearly four months later the child was again admitted to the children's clinic. Through an operation on a younger sister and an examination of the spleen, the diagnosis of the disorder affecting the two sisters, familial splenic anemia, was reached. The body weight of the 5 year old child was now 21 Kg. The low systolic murmur in the heart was still present. There were bluish green spots on the knees and on the anterior surface of the lower legs. The hemoglobin content was now 75 per cent, the erythrocyte count 3,780,000 and the leukocyte count 7,900. The patient was discharged at the end of two weeks. The good general condition of the child, the absence of subjective complaints and especially the fact that the liver was rapidly increasing in size pointed away from an operation. The thrombopenia was probably responsible for the hemorrhagic diathesis. The younger sister was operated on and the spleen removed. Two supernumerary spleens were found. The liver appeared to be large but the surface was not clearly seen. The child is feeling much better.

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Accident Insurance: XV. Treatment of Lesions of Foot. T. Eiken.—p. 375.
*Bacteriophage Treatment of Colipyuria in Children and Adults. O. Moltke.—p. 378.
Veneroid Ulcers on Portio of Uterus. G. Guldberg.—p. 391.

Bacteriophage Treatment of Colipyuria.—Twenty-nine patients with colipyuria were treated by Moltke by injection of bacteriophage into the bladder and intravenously, intramuscularly, or subcutaneously, with good results in fourteen (eight children) and subjective improvement in three. He urges great care in intravenous injection. From his results and those reported in the literature he concludes that colipyurias, even in marked chronic cases, can be cured by bacteriophage treatment. Recovery is ascribed to local immunity processes. Dosage and best methods of application are still to be determined. Investigations on resorption and elimination in healthy and infected organisms are also called for, likewise study of the local immunity reactions (phagocytosis), possibly with purified bacteriophage, to explain the effect of bacteriophage as a therapeutic agent.